

**The Role of Curriculum Resources in Three
Countries:
The Impact of National Curriculum Reforms in the
United Kingdom, the United States of America, and
Australia**

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ABSTRACT

This project examines the impact of standards-based and curriculum reforms on the role of materials in educational systems in the United Kingdom, the United States of America, and Australia. The project focused on identifying activities undertaken by publishing companies and in educational systems to develop, select and use materials in the context of standards-based and curriculum reforms by investigating: (1) research literature about the publishing industry, the policies controlling the adoption of materials, and the patterns influencing the use of materials in schools in the United States; (2) the perceptions of educational publishers about the impact of these reforms on the new materials developed by their companies to meet the needs of schools in implementing these reforms; (3) the impact of national curriculum reforms in the United Kingdom on the materials' marketplace; (4) the impact of the national standards movement in the United States on the materials' marketplace; (5) the impact of state standards in the United States on various aspects relating to materials designed to support these reforms; (6) the impact of national curriculum collaboration in Australia on the materials' marketplace; and (7) the impact of state and territory curricula in Australia on various aspects relating to materials designed to support these reforms. The report concludes by applying categories defined in a typology to classify various activities relating to the development, selection and use of materials identified in educational publishing and educational systems in the United Kingdom, the United States and Australia. Samples and questionnaires relating to surveys and a bibliography are appended.

FORM B - Certificate of Authorship of Thesis

Except as specially indicated in footnotes, quotations and the bibliography, I certify that I am the sole author of the thesis submitted today entitled -

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in terms of the Statement of Requirements for a Thesis issued by the University Higher Degrees and Scholarships Committee.

Signature of Author.....

Date

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PREFACE

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CHAPTER 1

INTRODUCTION

The purpose of this chapter is to indicate why the topic of developing, selecting and using materials needed to support standards-based education and the curriculum is important. This topic is introduced by reviewing efforts to enhance the role of textbooks and other materials by focusing on the Trends in International Mathematics and Science Study. Illustrating the best-documented example of how research findings about the role of textbooks influenced policy-makers during the 1990s, this case offers essential information for understanding the philosophic position taken in this study. The rationale statement that follows presents the assumptions and goals guiding the selection and ordering of objectives for this study, and the research plan outlines the steps taken to accomplish the objectives.

1.1 International Context for Standards and Assessment Reforms

International collaboration to compare national standards and assess student performances in different countries occurred only after nationally agreed standards and curricula had been developed. The stimulus for various countries to move towards international comparisons of standards may be attributed to authorities responsible for setting national and state standards in the United States requiring such standards to be as challenging as those developed in other countries. Following its establishment by the National Education Goals Panel (NEGP) in June 1991, the National Council on Education Standards and Testing (1992) recommended that world-class academic standards, and measures to assess them, should be developed. In November 1993, NEGP approved five guidelines for developing national standards, including endorsement for only those standards, which were as challenging and rigorous as standards in other countries. At the same time, the Goals 3 and 4 Standards Review Technical Planning Group (1993), convened by NEGP in May 1993, recommended ten criteria for judging high quality in national standards. A requirement that they be world-class, that is, at least as challenging as current standards in other leading industrial countries formed a criterion. Other organisations involved in assessing the quality of national and state standards also devised criteria to judge such standards against curricula developed in other countries. For instance, the American Federation of Teachers judged state standards against a criterion to identify the extent to which standards were benchmarked against world-class levels (Gandal, 1995).

1.1.1 International Comparison of Standards

Activities by groups involved in developing national curricula to assess the quality of their efforts through international comparisons became feasible. In an effort to satisfy calls to determine the status of world-class standards, the Council for Basic Education (CBE) and

the Council of Chief State School Officers (CCSSO) convened a symposium in 1993. National standards for the arts developed in Australia, Brazil, Germany, Japan, the Netherlands, the United Kingdom, and the United States were compared in a study for the National Endowment for the Arts. Then in June 1996, CBE convened an international symposium, called *Criteria for World Class Standards in Primary and Secondary Education*, in the Rockefeller Foundation's study and conference centre at Bellagio, Italy. Delegates from Australia, Chile, the Czech Republic, France, Germany, Japan, the United Kingdom, the United States, and the International Baccalaureate Organisation discussed the development of a set of world-class standards. A major outcome of the symposium was an agreement among the delegates to conduct a five-year project called *Schools around the World: An International Study of Student Academic Work*. Intended to collect, examine and publicise student work, the project documented examples for science in grades 4, 8 and 10. Cohorts of at least eight schools participated in each of nine countries or states: Australia; the Czech Republic; France; Germany; the Hong Kong Special Administrative Region; Japan; Portugal; the United Kingdom; and the United States. A national coordinator, who was appointed in each country, also participated on the International Steering Committee, responsible for overseeing the project. A Research Advisory Group was created to offer guidance through the conception and implementation phases of the project. Each national coordinator was responsible for selecting schools to participate in the project. Teachers in these schools selected student work, categorised according to a list of science topics agreed to by the International Steering Committee. This list was derived from an analysis of the Trends in International Mathematics and Science Study topics taught in the top-scoring countries, and in at least two-thirds of the participating countries. In May 2000, the first samples of student work in science were released on a CD-ROM, as an online course, and on the Internet from a database managed by the Center for Children and Technology, a division of the Education Development Center. In 2001, the Schools around the World project established the Academy of Teaching Excellence, offering a two-year professional development program focusing on standards-based lessons and their assessments. Teachers participated in four full-day workshops each year, together with online seminars to use the Schools around the World's evidence of excellence process to discuss, analyse, and reflect on student work from their own classrooms, as well as other national and international contexts.

1.1.2 International Comparison of Assessments

International studies of educational achievement, however, have had a more immediate impact on policy-makers endeavouring to refine standards. During 1994 and 1995, the International Association for the Evaluation of Educational Achievement (IEA) conducted the Trends in International Mathematics and Science Study (TIMSS), the most comprehensive international study of mathematics and science achievement ever

undertaken by assessing 9-year-old, 13-year-old and final year secondary students. TIMSS involved forty-five countries or states working under the direction and scrutiny of IEA. An international study centre was established at Boston College, Massachusetts, which worked closely with three contracted organisations: the Australian Council for Educational Research based in Melbourne, Victoria; Statistics Canada based in Ottawa, Ontario; and the IEA Data Processing Centre located in Hamburg, Germany. Each participating country was represented by a national research coordinator, who contributed input to working groups, which analysed textbooks in order to develop curriculum frameworks for mathematics and science used as a basis for constructing the tests consisting of multiple-choice and free-answer items. Whilst 9-year-old and 13-year-old students were assessed on their achievement in mathematics and science, and the final year secondary students were assessed in the areas of mathematics and science literacy, advanced mathematics and physics, subsamples from all groups participated in performance assessments. As well as completing the tests, all students provided information through questionnaires about their attitudes and parental expectations towards mathematics and science. For the part of the study relating to 13-year-old students, curriculum guides and textbooks were analysed to determine subject matter content coverage, sequencing of topics, and expectations for student performance. In Germany, Japan and the United States, sampled classroom groups participating in the mathematics assessments were videotaped, and a team of researchers observed classrooms and interviewed subjects about educational standards, individual differences, teachers' lives, and the role of the school (Stevenson, 1998).

In science, Austria, Australia, Canada, the Czech Republic, England, the Hong Kong Special Administrative Region, Hungary, Ireland, Japan, Republic of Korea, the Netherlands, New Zealand, Norway, Singapore, Scotland, Slovenia and the United States performed above international averages for both 9-year-old and 13-year-old students. Belgium (Dutch-speaking system), Bulgaria, Germany, Israel, Russia, Slovakia, Spain, Sweden, Switzerland and Thailand performed above international averages for 13-year-old students (Beaton et al., 1996a; Martin et al., 1997). In mathematics, Austria, Canada, the Czech Republic, the Hong Kong Special Administrative Region, Hungary, Ireland, Israel, Japan, Republic of Korea, the Netherlands, Singapore and Slovenia performed above international averages for both 9-year-old students and 13-year-old students. Australia, Belgium (both Dutch- and French- speaking systems), Bulgaria, France, Russia, Slovakia, Sweden, Switzerland and Thailand performed above international averages for 13-year-old students (Beaton et al., 1996b; Mullis et al., 1997). Final year secondary students from Austria, Canada, Denmark, Iceland, the Netherlands, New Zealand, Norway, Sweden and Switzerland performed significantly above international averages for mathematics and science literacy. Final year secondary students from Cyprus, Denmark, France, Lithuania, Russia and Switzerland performed significantly above international averages for advanced mathematics. Final year

secondary students from Denmark, Norway, Russia and Sweden performed significantly above international averages for physics (Mullis et al., 1998).

In 1999, the international study centre at Boston College replicated TIMSS in grade 8. The repeat, which included 26 of the countries or states participating in TIMSS in 1994-1995, involved 38 countries or states. In science, Taiwan, Singapore, Hungary, Japan, Republic of Korea, the Netherlands, Australia, the Czech Republic, England, Finland, Slovakia, Belgium, Slovenia, Canada, the Hong Kong Special Administrative Region, Russia, Bulgaria, the United States, New Zealand, Latvia, Italy, Malaysia and Lithuania performed above international averages (Martin et al., 2000). In mathematics, Singapore, Republic of Korea, Taiwan, the Hong Kong Special Administrative Region, Japan, Belgium, the Netherlands, Slovakia, Hungary, Canada, Slovenia, Russia, Australia, Finland, the Czech Republic, Malaysia, Bulgaria, Latvia, the United States, England, and New Zealand performed above international averages (Mullis et al., 2000). The repeat also included a video study conducted in Australia, the Czech Republic, the Hong Kong Special Administrative Region, Japan, the Netherlands, Switzerland and the United States (Hiebert et al., 2003). A benchmarking study undertaken in 13 states and 14 local school districts or consortia in the United States identified greater variation in mathematics and science achievement among school districts and consortia than among states. It also showed that students in well-resourced schools attained higher achievement than those in poorly resourced schools (Mullis et al. 2001; Martin et al., 2001).

In 2003, the international study centre at Boston College repeated TIMSS in grades 4 and 8. The repeat, which included 26 of the countries or states participating in TIMSS in 1994-1995 and 34 of the countries or states participating in the 1999 repeat, involved 50 countries or states. This replication offered participants of the earlier studies the opportunity to study trends for mathematics and science in grade 8 at three points over an eight-year period. With support from the National Science Foundation, an international panel of mathematics and science education and testing experts developed new assessment frameworks articulating mathematics and science knowledge and proficiency by surveying participant countries about topics included in their curricula (Mullis et al., 2003).

1.1.3 Impact of TIMSS on Materials and Policy-Making

As well as focusing on student attainment in mathematics and science, TIMSS also examined curricula used in participating countries in terms of intents determined through analyses of curriculum guides, textbooks and other materials, and implementation identified from information provided by teachers. These data confirmed the significant roles played by national, state and local authorities as well as publishers in presenting intended curricula in curriculum guides and materials, and by teachers in determining the

terms of implemented curricula. The outcomes of these studies were presented in three reports, one of which directed the attention of policy-makers in the United States to the important role of textbooks and other materials in curriculum reform.

Schmidt et al. (1997) presented the findings of analyses of 491 curriculum guides and 628 textbooks for mathematics and science used in the participating countries. They argued that the lack of focus in mathematics and science curricula in school systems in the United States and textbooks, preoccupied with breadth and quantity at the expense of depth and quality, affect the condition of teaching. Curricula used in the United States, particularly in mathematics, are unfocused in five respects. First, the number of topics covered in general courses taught in the middle grades is typically higher than in other countries. Second, topics are introduced earlier, repeated to a greater extent, and then dropped at a higher rate at the high school level than from curricula in other countries. Third, the diversity of topics limits the amount of time allocated to each topic. Fourth, the variations between curricula in different states of the United States mean that students study only a few common topics. Fifth, the basic content of mathematics and science curricula is defined differently from those of high performing countries.

The splintered character of mathematics and science curricula in the United States is reflected in textbooks characterised by three main features. First, mathematics textbooks cover far more topics, an average of 30 to 35, than mathematics textbooks from Germany and Japan, which average 20 and 10 topics respectively, and are larger and more comprehensive, but contain fewer passages dealing with critically important topics. The situation is even more exaggerated in science textbooks. American textbooks cover between 50 and 65 topics as opposed to Japanese textbooks, which cover only 5 to 15 topics. Second, the most emphasised topics in mathematics textbooks for grades 4 and 8 account for less space in American textbooks with an average of 60 and 50 percent respectively than the international averages of 85 and 75 percent respectively. The difference was greater for science textbooks with the most emphasised topics for grades 4 and 8 averaging 25 and 50 percent respectively as opposed to the international averages of 70 and 60 percent respectively. Third, American textbooks emphasise less complex expectations, which are not in keeping with the more demanding performances called for in national standards' documents.

Teachers handle the splintered vision presented in curricula and textbooks by teaching more topics, spending less time on key topics, and using more activities than their counterparts from other countries. The more demanding workloads faced by American teachers led them to choose this alternative, although their knowledge and attitudes about teaching and learning suggest they could be more effective if the prevailing system was

changed. Student attainment in science, and more particularly in mathematics, is likely to remain below international averages unless changes are made.

Schmidt et al. argued that cultural forces and national ideologies were responsible for differences between countries in the teaching of mathematics and science. The splintered vision arose in the American educational system, because it is guided by many agencies reflecting composite and sometimes contradictory visions, a diverse textbook market leading publishers to produce encyclopedic materials, and a reliance on standardised tests. The prevailing ideology of incremental assembly derived from assembly line production means that the curriculum is partitioned into many topics. The evidence suggested that the reform agenda, then at a stage of transition in American education, were characterised by a high awareness of reform activities, the integration of new and old curricula, and the need for more time to achieve success. Whilst American mathematics curricula represented in textbooks are compatible with those of Australia, New Zealand, Canada, Italy, Belgium (French-speaking system), Thailand, Norway, Hong Kong, Ireland and Iceland, American science curricula are similar to those of New Zealand, Greece, Bulgaria and China. Schmidt et al. contended that student attainments in these subjects should match more closely curricula of member countries of the European Union, the Asia-Pacific Economic Cooperation Council, and the Group of Eight industrial countries. Structural reform is required to move from the prevailing splintered vision of mathematics and science education to a central guiding vision in the United States, but this may be difficult to achieve because of the decentralised nature of the American educational system. Effective reform will need to be systemic, but also gain broad consensus within a federal system involving shared responsibilities for education.

Schmidt et al. concluded that American education needed to become more focused on powerful, central ideas, provide greater depth so that content produces insight instead of rote performance, and provide rigorous and meaningful subject matter that leads to life-long learning. In this regard, the authors posed a set of questions for policy-makers. How can mathematics and science curricula in textbooks be focused into an intellectually coherent vision? How can students' expectations and demands be raised? How can teachers' performances be improved? How can a better model for curriculum planning be found? How can a new vision for curriculum and teaching practice be developed?

This report directed the attention of policy-makers in the United States during the late 1990s to the relationship between textbooks and the curriculum in mathematics and science education, confirming the findings of earlier research studies conducted over several decades. These findings showed that subject matter content coverage in science textbooks is characterised by superficiality requiring wide topic coverage, an emphasis on

memorisation, and too little attention to the processes of science. They also showed that textbooks are inadequate sources for problem solving and other higher order cognitive processes in mathematics. Correcting these inadequacies in textbooks are likely to be instigated from a foundation in which a greater understanding has been gained about the complex interactions between publishers, selectors and consumers, reflected in the operations of the materials' marketplace.

1.2 Rationale for the Project

1.2.1 Rationale Statement

The purpose of this project is to determine the impact of major policy objectives inherent in standards-based and curriculum reforms occurring in the United Kingdom, the United States and Australia on the materials' marketplace. The intent is to determine the extent to which reforms in each of the three countries have changed the role of materials in terms of their development, selection and use by examining evidence from both the publishing industry and educational systems. To undertake this analysis, the evaluative criteria defined in Komoski's Schema of the Materials' Marketplace, outlined in detail in Chapter 3, were applied to categorise the outcomes of particular changes relating to the development, selection and use of materials. The concept of change arising from standards-based or curriculum reforms was incorporated into a typology based on decision settings defined in the Context Input Process Product Model postulated by Stufflebeam et al. (1971), also described in detail in Chapter 3. The outcomes classified in this typology allowed comparable judgments to be made consistently about phenomena occurring across different settings. These phenomena refer to specific activities relating to the role of materials in these settings.

The use of comparative method is likely to lead to important similarities and differences between the strategies applied in the three countries to address the impediments to reform associated with the materials' marketplace being identified. Analysing data about these activities, not only within national contexts, but also in the implementation of these reforms at the state and local levels, is likely to have important implications for understanding change in the materials' marketplace. The rationale assumes that the effects would be more evident in the United States, a country in which the interactions prevailing in the materials' marketplace are better understood than in the United Kingdom and Australia. In these two countries, little attention has hitherto been given to the significance of materials as an important variable affecting student achievement.

The significance of this study lies in determining answers to a variety of questions concerning the importance of materials as a key element of current efforts in standards-

based and curriculum reforms. What impact are these reforms having on the development of materials? What attributes of subject matter and social content are being affected in materials? What impact are these reforms having on the decision-making process for selecting materials? What features of selection procedures are being affected? What impact are these reforms having on the use and role of materials? What aspects of their use are likely to be affected? The importance of providing answers to these questions, and other questions, lies in presenting national, state and local policy-makers, curriculum specialists, school principals, teachers, publishers and other interested groups with information. This information may be used to improve their understanding about the importance of materials in curriculum reform efforts within different educational settings, and guide their policy-making in this field.

1.2.2 Objectives

The project embodied eight objectives. The first objective was to trace and reconstruct the processes used by the publishing industry to produce materials, and by state education agencies to select and use materials. The second objective was to trace and reconstruct the impact of the excellence debate and standards-based reform on effecting change in the materials' marketplace. The third objective was to describe activities of national associations of publishers and survey publishers on their perceptions about the impact of standards-based and curriculum reforms on their materials. The fourth objective was to trace and analyse the impact of national curriculum reforms in the United Kingdom on the materials' marketplace by describing activities relating to the development, selection and use of materials. The fifth objective was to trace and analyse the impact of standards-based reforms in the United States on the materials' marketplace by describing activities relating to the development, selection and use of materials. The sixth objective was to trace, analyse and classify information about state-level standards-based reforms in the United States, and relate this information to various aspects referring to materials. The seventh objective was to trace and analyse the impact of national curriculum collaboration in Australia on the materials' marketplace by describing activities relating to the development, selection and use of materials. The eighth objective was to trace, analyse and classify information about state curricula in Australia, and relate this information to various aspects referring to materials.

1.3 Research Plan

The eight objectives of this project were accomplished by applying various research methods. In a widely used text in this field, Isaac and Michael (1995) identified nine methods: historical; descriptive; developmental; case or field; correlational; causal-comparative or ex post facto; true experimental; quasi-experimental; and action. Investigators in this field now accept that research methods borrowed from other

disciplines are applied in educational research. For instance, ethnographic method has been adopted from anthropology, clinical method from psychology, and discursive method from philosophy. A final taxonomy consists of fifteen research methods: developmental; correlational; ex post facto; experimental; quasi-experimental; historical; survey; case study; action; ethnographic; autobiographical; content analysis; clinical; analytic discursive; and critical discursive.

Appropriate techniques were employed to apply three principal methods in the project. Historical method was applied to reconstruct the past objectively and accurately. Survey method was applied to describe systematically a situation or area of interest factually and accurately. Content analysis method was applied to describe and analyse systematically either verbal or written communication factually and accurately. The application of these methods is described below.

1.3.1 Historical Method

Historical method was applied in chapters 2, 3, 5, 6, 7, 8 and 9. In Chapter 2, the processes used by the publishing industry in the United States to develop and market materials, state education agencies to select materials and schools to use materials were reconstructed by applying historical method. In Chapter 3, the effect of the excellence debate and standards-based reform on changing the materials' marketplace in the United States was traced by applying historical method. In Chapter 5, historical method was applied to identify activities relating to the development, selection and use of materials arising from national curriculum reforms in the United Kingdom. In Chapter 6, historical method was applied to identify activities relating to the development, selection and use of materials arising from the national standards projects in the United States. In Chapter 7, historical method was applied to identify activities relating to the development, selection and use of materials arising from state standards-based reforms in the United States. In Chapter 8, historical method was applied to identify activities relating to the development, selection and use of materials arising from national curriculum collaboration in Australia. In Chapter 9, historical method was applied to identify activities relating to the development, selection and use of materials arising from state and territory curriculum reforms in Australia.

1.3.2 Survey Method

Survey method was applied in Chapter 4. In Chapter 4, a study was conducted to investigate the impact of standards-based and curriculum reforms on new materials developed by publishers in the United Kingdom, the United States and Australia.

1.3.2.1 A Study of Publishers of Materials

The method involved developing three forms of a questionnaire, which were administered to samples of publishing companies in the United Kingdom, the United States and Australia.

1.3.2.1.1 Target Population and Method of Sampling

Whilst it would have been desirable to survey samples derived from the populations of all publishers of materials in the three countries, it was recognised that it would be difficult, if not impossible, to identify the population by referring to available sources for this information. Therefore, the alternative approach of including in the sample only those publishing companies of materials, which were current members of national associations of publishers in the three countries, was chosen as offering a practical solution to the problem of sample selection.

The sampling procedure consisted of two steps. First, the membership of each national association was identified. In the cases of the Publishers Association and the Association of American Publishers, separate lists of members involved in educational publishing were maintained on the respective association's web site. Second, the author worked through the lists by referring to publishing companies' web sites and printed directories to determine whether each member was involved in publishing materials or some other facet of educational publishing. The director of the Publishers Association's Educational Publishers Council and the convener of the Australian Publishers Association's Schools Educational Publishing Committee provided assistance in this task. Once a final list, consisting of member companies publishing materials, had been determined for each of the national associations, the respective list was checked against the membership listed on each national association's web site for February 1999, so that each subsample reflected only the current membership. The final sample of publishing companies is reproduced in the report as three subsamples: Appendix A lists 41 British publishing companies; Appendix C lists 24 American publishing companies; and Appendix E lists 23 Australian publishing companies.

Twenty-two publishing companies, representing 25 percent of the 88 companies sampled, provided returns to the survey. Each country was represented in this group: 14 companies were located in the United Kingdom; four companies were located in the United States; and four companies were located in Australia. The responding companies were staffed by varying numbers of full-time employees: three companies employed less than 10 employees; three companies employed 10 to 24 employees; three companies employed 25 to 49 employees; three companies employed 50 to 100 employees; and 10 companies employed more than 100 employees. The approximate value of the responding companies' annual turnovers in materials sold for use by students in primary and secondary schools

varied in amounts reported in Australian dollars. Five companies had an annual turnover of \$100,000 to \$599,999. Four companies had an annual turnover of \$1,000,000 to \$9,999,999. Eight companies had an annual turnover of \$10,000,000 to \$50,000,000. Four companies had an annual turnover of more than \$50,000,000. One company failed to provide this information. Of the British companies, 14 published materials for use in England, 13 for use in Wales, 11 for use in Scotland and Northern Ireland, and nine for use in foreign countries. Of the American companies, four published materials for use in all states, and three for use in foreign countries. Of the Australian companies, two published materials for use in all states and territories, two published materials for use in New South Wales, Queensland and Victoria, and two for use in foreign countries.

The publication of materials in different media at the time of the survey varied widely among the 22 responding companies. Sixteen companies published textbooks, whilst one company intended to publish them. Supplementary materials for reading were published by 19 companies. Thirteen companies published print-based kit materials, whilst one company had published them in the past. One company published slides, filmstrips, films and television programs, whilst one company intended to publish them. Fifteen companies published audiocassettes, gramophone records and compact disks, whilst two companies had published them in the past. Six companies published videos, whilst two companies had published them in the past. Fourteen companies published multimedia materials, whilst one company had published them in the past. Twelve companies published computer software programs, whilst one company had published them in the past. Seven companies reported publishing other materials ranging from Internet lesson planners, supplementary materials, posters, numeracy digit resource cards, flash cards, photocopyable resources, board-games and work books to practice books.

Two of the British companies published materials for all 11 subjects of the National Curriculum. One company published materials for 10 subjects. Two companies published materials for nine subjects. Three companies published materials for eight subjects, one company published materials for six subjects. Two companies published materials for five subjects. Two companies published materials for two subjects. One company published materials for religious education. Two of the American companies published materials for all 12 subjects for which national standards had been developed, one company published materials for seven subjects, and one company published materials for five subjects. Two of the Australian companies published materials for all eight learning areas of the national statements and profiles, and two companies published materials for six learning areas.

1.3.2.1.2 Measurement Instrument

Development of the questionnaire passed through three stages. Early in 1997, the author designed a questionnaire consisting of three forms, one each to be administered to publishing companies in the United Kingdom, the United States and Australia. The forms were then presented at different times to various consultants over a two-year period. The form to be administered in the United Kingdom was reviewed by staff of the Qualifications and Curriculum Authority, the Scottish Consultative Council on the Curriculum, and the Publishers Association. The form to be administered in the United States was reviewed by an employee of a leading publishing company, who had formerly worked on standards-based reform in the United States Department of Education. The form to be administered in Australia was reviewed by staff of the Curriculum Corporation and the convenor of the Australian Publishers Association's Schools Educational Publishing Committee. Late in 1998, a statistics consultant employed by the University of Canberra reviewed the three forms. Finally, each form of the questionnaire was revised on two occasions, initially late in 1998 and then early in 1999, taking into account criticisms raised by reviewers.

The final versions of the three forms consist of four parts, with the first part intended to identify differences between groups within the sample. The purpose of the second part was to determine the influence of national standards and curriculum documents on the development of materials in each of the three countries. The intent of the third part was to determine the influence of national standards and curriculum documents on the instructional design of their new materials. The purpose of the fourth part was to identify the professional roles of the respondents to the survey. The form used to survey subjects in the United Kingdom, reproduced as Appendix B, consists of 66 items comprising two types: 60 multiple-choice items; and six open-ended items. The form used to survey subjects in the United States, reproduced as Appendix D, consists of 64 items comprising two types: 58 multiple-choice items; and six open-ended items. The form used to survey subjects in Australia, reproduced as Appendix F, consists of 66 items comprising two types: 60 multiple-choice items; and six open-ended items.

1.3.2.1.3 Design

Survey method was selected by the author as the most appropriate design to answer the research questions. It was found to be impossible to determine the impact that standards-based and curriculum reforms were having on the content and design of new materials being developed by publishing companies by examining documented sources of information. Therefore, the author concluded that information should be obtained from people working in the publishing industry about their opinions concerning the impact of standards-based and curriculum reforms on the development of new materials. It was recognised that opinions needed to be collected from as wide a range of publishing companies as possible in each of the three countries to permit a confident generalisation to

these groups in the publishing industry. Therefore, collection of this information was sought by questionnaire, because it represented the only feasible way for an independent researcher to collect these data from a sample of publishing companies scattered across three countries.

1.3.2.1.4 Data Collection Method

The method employed for collecting data from the sample involved distributing questionnaires to the subjects in each subsample according to a schedule that permitted the preparation of each form, its reproduction and collection of copies. The survey materials were dispatched by mail in two separate distributions: the first to 41 publishing companies in the United Kingdom and 24 publishing companies in the United States early in April, 1999; and the second to 23 publishing companies in Australia late in April, 1999.

The survey materials consisted of a copy of the questionnaire and a cover letter, which requested the publisher to choose three employees to complete the questionnaire. An employee with expertise in sales should be designated to complete the first part. An employee familiar with the process used by the company to develop materials and the application of standards-based and curriculum documents should be designated to complete the second and third parts. The company's director of educational publishing should be designated to complete the fourth part. Subjects were required to spend approximately 30 minutes in completing responses on the questionnaire, and were provided with the option of contacting the author by telephone or mail to clarify any queries concerning the questionnaire. Respondents were requested to return the questionnaires within two weeks of receiving them. Follow-up letters were sent to non-responding companies in the United Kingdom and the United States approximately two months after the dispatch of the questionnaire, whilst non-responding companies in Australia were contacted approximately one month after the dispatch of their questionnaires.

A computer-based file was designed and maintained to aid in data collection for each subsample. The name of each publishing company was entered, and columns were provided to list the dates when the survey materials were despatched, and returns and refusals received. Information referring to despatches of follow-up letters was also notated.

1.3.2.1.5 Data Analysis

Quantitative analysis was applied to quantitative data collected from the survey of publishing companies. Frequency distributions were plotted for all data, and represented in tabular form as frequency tables. Given that the small sample size would cause sampling error, statistical tests were not applied to analyse the quantitative data.

The use of content analysis method, which applied qualitative analysis techniques to data collected on open-ended items in the questionnaire, is reported under Content Analysis Method in Section 1.3.3.

1.3.3 Content Analysis Method

Content analysis method was applied in chapters 2, 3, 4, 5, 6, 7, 8 and 9. In Chapter 2, content analysis method was applied to analyse documents about the processes used by the publishing industry in the United States to develop and market materials, state education agencies to select materials, and schools to use materials. In Chapter 3, content analysis method was applied to analyse documents about the effect of the excellence debate and standards-based reforms on changing the materials' marketplace in the United States. In Chapter 4, content analysis method was applied to analyse responses reported by publishers on open-ended items in a questionnaire about the effect of standards-based and curriculum reforms on new materials published in the United Kingdom, the United States and Australia. In Chapter 5, content analysis method was applied to analyse documents about the effect of the decision-making processes and products inherent in national curriculum reforms in the United Kingdom on the materials' marketplace. In Chapter 6, content analysis method was applied to analyse documents about the effect of decision-making processes and products arising from the national standards projects in the United States on the materials' marketplace. In Chapter 7, content analysis method was applied to analyse documents and classify written information about the key features of state standards-based reforms in the United States on the materials' marketplace. In Chapter 8, content analysis method was applied to analyse documents about the effect of decision-making processes and products arising from national curriculum collaboration in Australia on the materials' marketplace. In Chapter 9, content analysis method was applied to analyse documents and classify written information about the key features of state curriculum reforms in Australia on the materials' marketplace.

1.3.3.1 Research about Developing, Selecting and Using Materials in the United States

The first step in identifying research literature on developing, selecting and using materials in the United States was to consult a bibliography published by Woodward et al. (1988), which provided an annotated list of references on these topics. In addition, searches of the Educational Resources Information Center (ERIC) database were made to update the references provided in the bibliography. Information obtained from citations identified from these searches, covered books, collected works, reports, and journal and newspaper articles. Once copies of available documents were obtained from library collections, they were read and summaries prepared. These summaries were then organised

chronologically according to theme, and incorporated into a commentary on the publishing industry, selection process, and use and curriculum role of materials in the United States.

1.3.3.2 The Materials' Marketplace: A Model for Decision-Making

The first step in identifying research literature on the effects of reforms on the materials' marketplace in the United States was to consult a bibliography published by Woodward et al. (1988), which provided an annotated list of references on these topics. In addition, searches of the Educational Resources Information Center (ERIC) database and the web site of the National Education Goals Panel were made to update the references provided in the bibliography. Information obtained from citations identified from these searches, covered books, collected works, reports, and journal and newspaper articles. Once copies of available documents were obtained from library collections, they were read and summaries prepared. These summaries were then organised chronologically according to theme, and incorporated into a commentary on efforts to reform the materials' marketplace.

1.3.3.3 A Study of the Impact of Curriculum Reforms on the Publishing Industry

Quantitative analysis was applied to the open-ended items in the questionnaire. One open-ended item asked the subjects to specify factors to explain the influence of standards and curriculum documents on the content of new products. Another open-ended item asked the subjects to explain how the greater uniformity brought about by standards-based and curriculum reforms had improved or hindered the publishing company's development of new products. For both of these items, the responses of all subjects were grouped into categories and then quoted in the report.

In addition, one open-ended item sought a copy of the company's policy statement on the use of curriculum documents, whilst another open-ended item sought a copy of one product claimed by the publisher to have been influenced by the content of standards-based and curriculum documents. As most respondents supplied only single components from multimedia basal programs, additional information about particular products was obtained from publishing companies' web sites. Products obtained from respondents together with information obtained from the Internet were subjected to a form of content analysis referred to as instructional design analysis. Instructional design analysis, a technique applied by the Educational Products Information Exchange Institute to evaluate materials, involves eliciting qualitative information for each of the four constructs or elements of the curriculum in terms of Tyler's objectives model. The instructional design analysis of each product is preceded by introductory information identifying the physical characteristics of the product, and followed by a statement on the history of the product's development. As well as presenting an instructional design analysis, the analyst compared this information with available evidence concerning the compatibility of the material with particular curricula or standards for jurisdictions in which the product is used.

1.3.3.4 National Curriculum Reforms in the United Kingdom

The first step in researching national curriculum reforms in the United Kingdom involved searching the British Education Index. Information obtained from citations identified from these searches, covered books, collected works, reports, and journal articles. Also, policy documents collected from national education organisations since 1990 provided a valuable source for information on historical backgrounds to national curriculum reforms. However, greater reliance was placed on personal correspondence with officials of education organisations than reference to secondary sources for verifying the currency of information. In addition, access to current information from these organisations was obtained on the World Wide Web by accessing the portal, the United Kingdom Government Information Service, available on UK On-line managed by the Office of the e-Envoy. Data analysis involved reading all relevant documents and preparing summaries.

These summaries were then organised chronologically, and incorporated into a commentary on national curriculum reform in the United Kingdom.

1.3.3.5 National Standards-Based Reform in the United States

The first step in researching standards-based reform in the United States involved searching the ERIC database. Information, obtained from citations identified from these searches, covered books, collected works, reports, dissertations and journal articles. Also, policy documents collected from federal agencies since 1990 provided a valuable source for information on the historical background to standards-based reform. However, greater reliance was placed on personal correspondence with officials of education organisations and national subject associations involved in the national standards projects than reference to secondary sources for verifying the currency of information. In addition, access to current information from these organisations was maintained by accessing the portal, Developing Educational Standards. Launched in August 1995 on the web site of the Putnam Valley School District in New York, Developing Educational Standards was transferred to the web site of the Wappingers Central School District in New York in November 2001. Data analysis involved reading all relevant documents and preparing summaries. These summaries were then organised chronologically, and incorporated into a commentary on standards-based reform in the United States.

1.3.3.6 Standards-Based Reforms at the State Level in the United States

The first step in researching state standards-based reforms in the United States involved accessing current information on these reforms in the states by accessing the portal, Developing Educational Standards. Searches of the ERIC database were also conducted. Policy documents collected from state education agencies since 1990 provided a valuable source for information on the historical backgrounds to state standards-based reforms. However, greater reliance was placed on personal correspondence with officials of state education agencies than reference to secondary sources for verifying the currency of information.

Current information on the state-level selection of materials was accessed through the web site of the National Association of State Textbook Administrators. The National Association of State Textbook Administrators consists of members drawn from Alabama, Arkansas, California, Florida, Georgia, Idaho, Illinois, Indiana, Kentucky, Louisiana, Mississippi, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Virginia and West Virginia. This web site provides information on state adoption cycles, and presents semiannual reports provided by state textbook administrators on developments relating to selection procedures in each member state.

Information obtained from these sources was classified according to a set of categories derived from Marzano and Kendall (1996). Because the content analysis covered a wider scope than Marzano and Kendall's study, additional categories were developed initially by reading a sample of documents. Then, the content categories were added to those specified by Marzano and Kendall, and reorganised to form a set of eleven descriptors. Data analysis involved examining all relevant documents cited for explicit statements relating to each content category. Once such statements were identified, they were summarised and transcribed in a standardised form.

1.3.3.7 National Curriculum Collaboration in Australia

The first step in researching national curriculum collaboration in Australia involved searching the Australian Education Index (AEI) and the ERIC database. Information obtained from citations identified from these searches, covered books, collected works, reports, and journal articles. Also, policy documents collected from national education organisations provided a valuable source for information on historical backgrounds to national curriculum collaboration. However, greater reliance was placed on personal correspondence with officials of education organisations than reference to secondary sources for verifying the currency of information. In addition, access to current information from these organisations was obtained by accessing the portal, Education Network Australia, managed by Education.Au based at Dulwich, South Australia. Data analysis involved reading all relevant documents and preparing summaries. These summaries were then organised chronologically, and incorporated into a commentary on national curriculum collaboration in Australia.

1.3.3.8 Curriculum Reforms at the State Level in Australia

The first step in researching state-level curriculum reforms in Australia involved accessing current information on curriculum reforms in the states and territories by accessing the portal, Education Network Australia. Searches of the AEI database were also conducted. Policy documents collected from state and territory education agencies since 1990 provided a valuable source for information on historical backgrounds to state-level curriculum reforms. However, greater reliance was placed on personal correspondence with officials of state and territory education agencies than reference to secondary sources for verifying the currency of information.

Information obtained from these sources was classified according to a set of categories adapted from those defined for the study of state-level standards-based reforms in the United States and reorganised to form a set of ten descriptors. Data analysis involved examining all relevant documents cited for explicit statements relating to each content

category. Once such statements were identified, they were summarised and transcribed in a standardised form.

1.4 Description of the Final Thesis

The final thesis consists of ten chapters. The first chapter presents the rationale for the project, explicates the objectives of the project, and describes the research plan for conducting the project. The second chapter reviews research literature about the publishing industry, the policies controlling the selection process, and the patterns influencing the use and curriculum role of materials in schools in the United States. The third chapter examines the impact of educational reform on the materials' marketplace in the United States with the intention of defining a typology to classify changes in phenomena relating to the development, selection and use of materials. The fourth chapter reports a study on the perceptions of publishers about the impact of standards-based and curriculum reforms on the new materials developed by their companies to meet the needs of schools in implementing these reforms. The fifth chapter examines the nature of the decision-making processes inherent in national curriculum reforms in the United Kingdom to determine their impact on the materials' marketplace. The sixth chapter examines the nature of the decision-making processes inherent in standards-based reform in the United States to determine their impact on the materials' marketplace. The seventh chapter examines the nature of the decision-making processes inherent in developing, implementing and revising state standards, and relates these activities to various aspects concerning materials designed to support such activities. The eighth chapter examines the nature of the decision-making processes inherent in national curriculum collaboration in Australia to determine their impact on the materials' marketplace. The ninth chapter examines the nature of the decision-making processes inherent in developing, implementing and revising state curricula, and relates these activities to various aspects concerning materials designed to support such activities. In the last chapter, categories defined in the typology are applied to classify various activities relating to the development, selection and use of materials identified in the publishing industry and educational systems in the United Kingdom, the United States and Australia.

CHAPTER 2

RESEARCH ABOUT DEVELOPING, SELECTING AND USING MATERIALS IN THE UNITED STATES

Noah Webster's *Grammatical Institute of the English Language*, consisting of a spelling book, a grammar and a reader, first published at Hartford, Connecticut, in 1783, is credited with introducing American content into readers of the time. Although it achieved astoundingly large sales over more than a century of publication, the first edition preceded the advent of the modern publishing industry and mass education. Webster relied on contracting printers in Connecticut, Massachusetts, New York, New Jersey and Pennsylvania to reproduce copies, since transportation facilities of the time were inadequate to publish an edition for distribution nationwide. The appearance of modern practices in textbook publishing, however, was concomitant with the rise of mass education, characterised by graded organisation of formal schooling into classes. It is associated with the publication and marketing by the Cincinnati publishing firm, Truman and Smith, of William McGuffey's *Eclectic Readers*. In 1836, Truman and Smith approached McGuffey, a preacher and teacher at Miami University in Oxford, Ohio, to write a series of four graded readers suitable for the common schools being established in the mid-western states. McGuffey signed a contract guaranteeing a royalty, and provided the manuscripts to the publisher, who engaged sales people to visit the expanding number of schools in the mid-western and southern states. Within a decade, McGuffey's *Eclectic Readers* had penetrated this market, selling at a rate of two million copies each year. Between 1836 and 1890, the series was revised by several editors and passed through seven publishers before being acquired by the American Book Company, which established a monopoly controlling up to 80 percent of the textbook market across the United States in the 1890s. This situation prevailed until rivalry from smaller companies opened up the publishing industry to greater competition in the first decades of the twentieth century.

At the same time as the publishing industry was developing in the United States, the states enacted legislation controlling the adoption and free supply of textbooks. Legislation standardising procedures for adopting textbooks arose during the mid-nineteenth century in each state in response to the development of graded organisation requiring uniform textbooks for formal schooling in classes. Initially, uniformity was practised at the local level through laws requiring each local school board to adopt a list of textbooks, which parents were required to supply for a given period of time. The supply of free textbooks to students in public schools was first mandated in Philadelphia in 1818, and extended to the state level when Massachusetts became the first state to enact legislation in 1884. Instances of laws extending the adoption and free supply of textbooks to the state level increased

during the late nineteenth century and early twentieth century, but at different rates. The increase was greater for legislation affecting the adoption of textbooks, which was characterised by two main attributes. First, extension tended to move from the local to the county, and finally to the state level, although there were a few cases of states abandoning centralised procedures in favour of local-level adoption. Second, a pattern showing relatively equal and constant balance between north-eastern and mid-western states using local-level adoption procedures, and south-eastern, southern and western states applying state-level adoption procedures, became established by the beginning of the twentieth century. On the other hand, a different pattern emerged with regard to legislation requiring the supply of free textbooks, which showed little relationship to the pattern of legislation referring to textbook adoptions. Generally, legislation mandating the supply of free textbooks was confined to a few northeastern, mid-western and southwestern states, although legislation permitting free textbooks was common in most northern, southeastern, southern and northwestern states.

The purpose of this chapter is to examine the developmental processes inherent in the publishing industry, the factors controlling the selection of materials, and the patterns influencing the use of materials in the United States by reviewing published literature that has investigated these phenomena. The review of an extensive body of research literature on these topics is likely to increase the reader's understanding about the complex interactions between development, selection and use of curriculum resources, the components contributing to constructing the dynamic nature of the materials' marketplace. However, generalisation of the findings of this research literature should be approached with caution, since the review is confined to studies and commentaries referring to the United States. This body of literature represents the only comprehensive research findings and critical commentary on these topics relating to any of the three countries. Whilst research literature has been published on a few aspects relating to these topics in the United Kingdom and Australia, such studies do not form an inclusive body of literature from which a coherent picture emerges concerning the interaction of these factors in the materials' marketplace.

2.1 Publishing Industry

In the commentary to a bibliography of research literature, Woodward et al. (1988) concluded that since little has been published about the role of authors, the production of textbooks, the influence of the marketplace, and the economics of the publishing industry, the publishing industry remains both cryptic and inaccessible. Within the coverage of research literature, Woodward et al. Identified two types, one laudatory and the other factual and anecdotal. The former encompassed articles authored by publishing company executives praising the quality of their publications. The latter included reports on the

process used by publishing companies to develop textbooks, often treated in an historical context, and covering such issues as copyright dating, the employment of authors for their professional authority, the role of in-house development departments, content coverage, design features, learner verification, and corporate mergers. Woodward et al. also noted that the history of research on aspects relating to the publishing industry has been sporadic. Major contributions have been made to research in studies reported by the National Society for the Study of Education in 1931, Cronbach in 1955, and the National Society for the Study of Education in 1990.

Using the conclusion reached by Woodward et al. about the nature of the research literature on the publishing industry, the following reviews cover two main aspects. First, the nature of the publishing process is analysed by reviewing the most significant literature published on this topic since the mid-1950s. Second, the roles of participants in the publishing process are analysed by reviewing empirical research published in the early 1930s on the role of authors, and more recently, literature published on various factors impinging on the different roles of authors and editors in the publishing process.

2.1.1 Publishing Process

Schramm (1955) examined implications of economical, technological and human factors on the publishing industry. The publishing industry was characterised by being almost entirely controlled by private enterprise, small-scale in its operations, modest in its growth, limited to approximately 75 companies, general rather than specialised, and subject to constant changes resulting from interactions between authors, publishers and teachers. An analysis of data published by the American Textbook Publishers Institute for the years 1939, and 1946 to 1952 indicated that approximately half of the income from sales was expended on production costs, and the prevailing low margins were decreasing. The economics during this period shifted with a decline in the market for college textbooks and an increase in the market for elementary school books. This shift increased the costs involved in marketing, because a greater number of sales people needed to be employed, and depositories had to be maintained in some states. The greatest cost in marketing, however, was that lost in capital tied up in unsold books, although this may have been lessened by the seasonal nature of sales over a period of several years. Schramm viewed the publishing industry as innovative to the extent that its products needed to be ahead of market demands, although there were few means available at that time to check the effectiveness of such innovations. Innovations were unlikely to increase, unless brought about by new technological advances in printing or by diversification in the media of products. The main technological factor affecting production in the 1950s was the widespread use of machine typesetting, which was cost-effective for large runs suitable for national editions, but inefficient for producing small editions, or presenting illustrations

and colour. Editorial decisions, such as text readability and comprehensibility, also affected production. An important problem that confronted the publisher of the time related to determining the best ways of integrating different media within the publishing enterprise to produce multimedia materials. Human factors in the publishing industry were categorised according to different roles. The role of the editor was identified as the most important within the publishing process. It involved assembling and coordinating a team of authors, and overseeing the manuscript through the steps of editing, design and manufacture. The role of sales people became more important, since they were responsible for finding authors, reporting sales trends, as well as selling materials. Schramm believed that the rewards for these groups were predominantly economic, and their motivations largely determined by the influences their materials had in schools. Their influence on the publishing process was felt in the physical design, the scope and sequence of the content, and presentation of textbooks. Schramm recommended that research on textbook publication should be directed to four fields: improving understanding about the processes of making text; identifying cost barriers; determining the nature of learning from text; and evaluating their use through field studies.

Brammer (1957) reported that publishing in the United States in the 1950s was competitive, and required large expenditures on editorial departments and promotional staffs for servicing schools. Editorial departments consisted of executive, subject matter and grade-level editors, supported by editorial assistants, many of whom were drawn from the teaching profession. In addition, typographers, art editors, and production editors were required, playing a minor but important part in the publishing process. Brammer argued that publishers and editorial staff played predominant roles in developing, revising and editing new materials. Authors were usually chosen by publishers, and offered contracts stipulating royalties in exchange for all other rights. Writing involved a cooperative process between publishers, authors and editors. Greater attention to production techniques at that time had increased the costs of producing materials, and led publishers to employ designers, art editors, and production experts. Publishers also maintained large forces of promotional staff for selling, distributing and demonstrating new materials, although their activities were controlled by regulations governing adoption at the state and local levels. Brammer concluded that publishing in the United States, in contrast to many other countries, was controlled almost entirely by private publishing enterprise with little involvement by federal and state governments.

Black (1967) argued that the publishing industry needed to adjust to the increasing rate of change in education, because of the important role of materials in schools. By describing the publication and marketing of Harper & Row's textbook, *Today's Basic Science*, during the early 1960s, Black covered nine sequential steps in the publishing process. Preliminary

steps consisted of planning, researching the market, and appointing an editor. Then a working relationship was established between the editor and authors leading to development of drafts. Readability formulas were applied, and the text was edited to an appropriate reading level. Controversial topics were treated. The text was illustrated using a team of free-lance artists overseen by an art director. The published textbook was marketed, initially in Florida to teachers, district selection committees, and the state selection committee prior to adoption. A competitor's attacks were countered by challenging the competitor's product. The textbook was revised to produce a new edition incorporating depictions of minority groups in illustrations. The activities of the main personnel involved in developing, publishing and marketing materials were characterised by particular features. Generally experienced teachers identified through their prominence in education, the authors of textbooks offered the endorsement of authorship to the product rather than their contribution to the writing process. The careers of editors, who were often frustrated teachers, were usually limited to editing only a few texts. Large companies employed from 100 to 150 sales people, who covered defined territories, often working with consultants to visit teachers in schools, appearing before selection committees, and gaining expertise about their employers' and competitors' products. The characteristic of conformity in the nature of materials was associated with testing the strength of their bindings in the laboratory, the treatment of controversial topics, often by omission, the conventional organisation of the content, and the high financial stakes involved in developing and marketing. By referring to an innovative mathematics textbook, *Seeing Through Arithmetic*, developed by Scott, Foresman and Company between 1941 and 1964, breaking the mould of conformity involved increasing expenditure on development over this period in anticipation that changing trends in mathematics education would lead to increasing sales. Publishers dealt with controversial topics in materials in response to pressures exerted by interest groups and selection committees seeking the elimination of bias, rather than taking their own initiatives.

Presenting one of the few accounts written by a publishing executive, Jovanovich (1969) contended that the publishing industry in the United States arose about 1880 in response to greater uniformity in local educational systems resulting from immigration and industrialisation. These social and educational changes led to the development of a profitable publishing industry that went unchallenged in its processes and products until the advent of the curriculum reform movement in the 1960s. The federal government funded curriculum development projects to produce materials in a range of media, which influenced publishers to match this change by producing products using various media. Technological improvements in printing, such as the introduction of rotary presses, offset printing, new techniques in binding paperback books, setting type photographically or

electronically, and electrostatic printing, stimulated publishers into producing high quality products in terms of design.

Edgerton (1969) examined the application of the publishing process to develop social studies textbooks. Authors rarely presented completed manuscripts to publishers, but were generally discovered by editors at conventions, or by sales representatives reporting back on promising teachers. The preference for authors to be practising rather than retired teachers, and motivated by the desire to improve education were important characteristics sought by publishers. Contracts between an author and a publisher were negotiated over a period of time on a flexible basis. The role of the editor involved coordinating a team of authors, illustrators, critical readers, and other participants by evaluating plans, identifying strengths, eliminating faulty practices, and reinforcing the work of the developmental process. Edgerton identified four stages through which a textbook proceeds during the publishing process. The pre-writing stage involved matching an identifiable educational need with an author capable of meeting it by specifying a proposal for consideration by a new publications committee. If approved, a writing plan was drawn up naming authors, subject-matter consultants, a graphics team, other specialists, and managers. The second stage, which involved writing and editing the textbook, consisted of four steps. First, the editor evaluated the readability, style, and accuracy of the draft chapters prepared by the author. Second, detailed editing followed, when sufficient chapters of the textbook were available. Third, artwork and maps were integrated through consultation between the editor and the art editor. Fourth, the manuscript was field-tested by employing teachers as critical readers or trying it out with students before final editing. The third stage consisted of transferring the manuscript to print through a series of six steps. First, graphics work was completed. Second, the manuscript was sent to a composition house to be set in type. Third, the author edited the galley proof. Fourth, the graphics editor included the illustrations. Fifth, corrections were made, type was adjusted to page length, and the index and acknowledgments were included in preparing the page proof. Sixth, the reproduction proof and illustrations were positioned on pattern pages, a procedure known as 'dummying'. The fourth stage involved manufacturing by a printer and binder through plate-making, lithographic printing, and binding followed by distribution. In addition, a textbook was usually supplemented with a teacher's guide, which was often available before the student textbook, so that free copies could be made available to selection committee members and subject coordinators.

From personal experience, Bragdon (1969) described the writing and editing of an American history textbook series, *History of a Free People*, over a twenty-year period. Approached by a Macmillan vice president, Bragdon reported the publisher accepted his suggestions about organising the text, appointed a co-author and an editor, who worked as

a team without directions from the publisher except for technical matters. The publisher, however, imposed three restrictions. Initially the team was required to write according to readability formulas under the supervision of a curriculum consultant. The American Civil War had to be called the War Between the States as a concession to the southern market. The design of the textbook reflected concessions to market needs with new editions being published every two years. Although the subject matter was criticised by conservative pressure groups, the publisher advised ignoring them rather than challenging or accepting their demands in the interest of furthering commercial success. Two issues concerned Bragdon as development of the textbook proceeded. First, the organisation of the content in the textbook to facilitate its use for memorising and regurgitating facts was not overcome, in spite of including a sketch of an historical figure of the time, a short essay, and questions to prompt further study or discussion. Furthermore, this limitation was not acknowledged in the teachers' guide. The publication of a supplementary material presenting history as dealing with people and a series of supplementary materials on source documents for talented students intended to surmount this shortcoming would be ignored by many teachers. Second, concerns to reduce the length of the text led to simplifications, the lack of comprehensive knowledge of the subject matter led to plagiarism, and the requirement not to offend different pressure groups led to the omission of controversial issues. Bragdon concluded that writing a textbook involved a requirement to make compromises in the interest of commercial success.

Presenting an editor's perspective, Broudy (1975) argued that the process of developing and publishing materials involved interaction between the author, publisher, editorial staff, sales staff, teachers and parents in reaching compromises about the various demands. The author was usually selected by the publisher, and often worked as a member of a committee in developing a material. Sometimes publishers paid a higher royalty to a lead author with a reputation in the field for providing credibility, but who may contribute little in actual work to the total enterprise. Editors, however, were major contributors to the developmental process, although not often credited as such by the publishing industry. The relationship between editorial and sales departments in many publishing companies was often antagonistic, which inhibited feedback from schools about products being made available to editors. Sales staff usually dealt with administrators and selection committee members rather than teachers, and their judgments about the suitability of products for classroom use were often inaccurate. Publishers generally coordinated the development of materials to the cycles of state-level adoption states, especially Texas and California, as success in these states was likely to pay for the developmental costs. This situation created a vicious circle in which market resistance to innovation led publishers to produce conservative and uncontroversial materials. The high cost of publishing materials and the low profit margin also militated against publishers promoting innovation. Broudy

concluded that publishers should show greater accountability for their products by testing them during the developmental phase, and promoting change that recognised students as the essential group within the marketplace.

Presenting an analysis of the key factors transforming the materials' marketplace in the 1980s, Westbury (1990) argued that the publishing industry acquired a *de facto* role as a national curriculum authority, because of the failure of the states to define a common curriculum. Whilst an attempt was made by governmental agencies to define a new curriculum through projects initiated during the curriculum reform movement in the 1960s and early 1970s, their products failed to be taken up by school systems. Since that time, the publishing industry became dominated by a small number of major companies, because of the high investment involved in developing, manufacturing and distributing materials. Although the publishing industry may not have performed well in the task of leadership and control over the curriculum and production of high quality materials, Westbury concluded that a better result could not have been expected. Constraints upon its operations, the interdependence of its relationship with a diffusely organised school system, and the failure of critics of poor quality in materials to institutionalise their values compromised its performance.

Two commentators examined the transformation of the materials' marketplace through mergers and takeovers. Rudman (1990) argued that corporate mergers within the publishing industry affected the international dimensions of publishing, the costs and gains of restructuring in terms of financial and human resources, and the relationship between textbook and test products. Although the effects of takeovers by foreign and domestic competitors were similar, the advantages and disadvantages of takeovers are difficult to assess. Whilst mergers led to restructuring into more efficient and competitive companies, the greater concentration of financial resources may lead to a less competitive business environment. The restructures caused by mergers also had profound effects on the lives of employees. Dismissed as a consequence of mergers, many former employees became involved with small publishing companies, whilst employees, who were retained, often lost their commitment to company loyalty. Corporate mergers also contributed to a move away from contracted authorship to in-house production of textbooks and tests by editorial teams, which may compromise accountability and thereby affect the quality of the products. Rudman argued that the public should challenge the motivations put forward for corporate mergers, which have produced greater centralisation in the publishing industry, tighter control through in-house production, and disrupted the lives of long-term employees.

Sewall and Cannon (1991) reported that macro-economic globalisation during the 1980s affected the publishing industry as independent publishers were acquired by large, multinational media, communications and entertainment conglomerates. The number was reduced to five large publishing houses: Macmillan; Harcourt Brace Jovanovich; Silver Burdett and Ginn; Houghton Mifflin; and Scott, Foresman. Whilst these publishing companies dominated the national market, a few, middle-sized, regional publishing companies established pre-eminence in particular subject areas, but small publishing companies were usually restricted to publishing supplementary materials. The restriction of the marketplace to fewer competitors was also matched by the increasing cost of producing a national textbook program across the elementary grades, estimated to be as high as \$40 million. Whilst this outlay may realise margins of 10 to 20 percent, it is likely to take many years to recover. Sewall and Cannon concluded that as conglomerates gained control of the publishing industry, barriers to market entry and survival posed by increasing production and marketing costs, did not portend well for improving the quality of products. This effect, however, is likely to be reversed by political leaders, educators and parents calling for educational reforms, including raising curricular quality through textbook improvement.

By analysing current financial characteristics of large publishing companies, Squire and Morgan (1990) found that increasing operating costs and declining profits have meant they are now dominating the publishing industry, and aiming their products at a national market. They identified that the process used by large publishing companies to develop textbook programs was dependent on preparing a rationale in advance or a detailed specification of the philosophy for the design and key features of the textbook. Often, market research was undertaken, and portions of the text were piloted. Authors worked with experienced editors in evaluating this research, and marketing personnel studied textbook programs, as they were developed to interpret likely acceptance by teachers. Following publication, publishers were responsible for training sales and consultant personnel, developing promotional materials, providing professional development for teachers, and planning new editions. Publishers need to take into account the prevailing patterns of decision-making involved in selection, when marketing their products. Squire and Morgan suggested that the process for developing textbooks might be improved by requiring authors to accept greater responsibility for quality, involving publishers earlier in school improvement projects, and recommending that publishers reconsider the soundness of sales strategies involving free materials. Teachers should be trained to evaluate and select materials, and school funding should be increased to allow greater flexibility for purchasing materials.

Reporting on the publishing process used by large publishing companies through a case study, Young (1990) described the three-phase process employed by Holt, Rinehart and Winston to develop a new edition of a best selling biology textbook, *Modern Biology*. The pre-production phase involved surveying market needs and competitive products. The developmental phase involved a production team of authors, subject specialists, consultants, content and copy editors, a photo researcher, an art director, a production manager and sales personnel, overseen by a senior editor, developing the textbook and ancillaries in response to feedback from the educational community and special interest groups. The post-production phase involved monitoring the response to the marketing of the textbook and ancillaries for sales' results and feedback about potential changes, and sales personnel developing promotional materials and providing training in the use of the product.

Two commentators examined the role of small companies as niche publishers. By considering the constraints faced by small publishing companies involved in publishing basal textbooks for the elementary level in reading, language arts, mathematics, science, and social studies, Carus (1990) identified that they took advantage of needs not met by large publishing companies. The most important were taking advantage of new opportunities afforded by the effects of the educational reform movement, and the ineffective bureaucracy or management changes in large publishing companies resulting from takeovers. On the other hand, small publishing companies faced difficulties in affording sufficient sales staff to cover the market, applying computer technology, responding to changing attitudes resulting from the impact of various minority groups, and applying resources to current educational research in order to improve their products.

Hawke and Davis (1990) defined the role of small publishers as catering for five main niche markets: materials focused on current topics or new content; materials based on innovative pedagogy; materials aimed at specific populations; materials with innovative formats; and materials aimed at local or regional markets. Hawke and Davis described the history of a typical niche publishing company by reporting a hypothetical case. Having usually been employed previously in education or publishing, niche publishers were motivated by both profit making and a commitment to improving education, but rarely had experience in all aspects of the publishing industry. Often small publishing companies were profitable initially, whilst the entrepreneur did most of the work, but expansion needed to compete in the marketplace led to niche publishers taking financial risks. Sometimes, a larger competitor adapted a niche publisher's product, which led to a takeover, but bankruptcy was a more common outcome. Hawke and Davis recommended that publishers in small companies should recognise that they only have a three- to five-year opportunity for profit-

making, their costs require rigorous control, and slick packaging, free samples, piloting products in schools, and discounting products should be avoided.

2.1.2 Roles of Participants

Several surveys conducted in association with the report issued by the National Society for the Study of Education in 1931 elicited empirical data about the role of authors, their backgrounds and selection, and the methods they applied. From a survey of 35 publishers, Jensen (1931) found that they usually selected authors through personal contacts with their field representatives. The respondents reported preferring professional educators to lay people as textbook authors. The respondents selected manuscripts for textbooks by applying three main criteria: judging whether there was a need for a new material, whether the material was innovative, and the author's competency. However, they reported that only 5 percent of unsolicited manuscripts were accepted. The respondents indicated that they actively sought the reactions of teachers and subject specialists about manuscripts before acceptance. They reported that their staffs studied various reports on materials, as a means of anticipating needs for new materials. They indicated that editorial staffs had wide responsibility for judging manuscripts, and controlling revision and reorganisation of accepted manuscripts. Some respondents piloted manuscripts in classrooms before publication.

Richey (1931) reported conducting content analyses of 1,562 textbooks published over a 50-year period from 1876 to 1926 to determine the professional status of the authors. It was identified that the occupations of the authors of 1,174 textbooks, 75.2 percent of the sample, could be classified according to professional connections. Of the 1,055 authors, 39.3 percent were affiliated with higher education, 22.1 percent were associated with elementary and secondary schools, 14.1 percent were superintendents, 3.4 percent held other school positions, 4.3 percent were members of publishers' staffs, 6.0 percent belonged to occupations outside education, whilst 10.8 percent were unemployed. Over this period, it was found that the proportion of authors associated with higher education increased markedly, the numbers of authors associated with schools showed little change, and authors from other occupations decreased. Within the former category, the numbers of authors affiliated with faculties of education in institutions of higher education increased rapidly from zero at the beginning of the period to constitute two-thirds of authors associated with higher education at the end of the period.

Schorling and Edmonson (1931) reported surveying members of the National Society for the Study of Education and the American Educational Research Association in 1929 to identify whether authors of elementary textbooks in spelling, arithmetic and social studies applied research findings and used scientific methods to develop their materials. They

concluded that authors of spelling texts used standard word lists extensively, but that there was less research evidence that scientific principles were applied for grade placement, items of organisation, and decisions relating to method. Although authors of arithmetic textbooks generally applied research evidence to select content, there was less evidence that research findings were applied to determine grade placement and appropriate methodologies. Although authors of some social studies textbooks applied research evidence to select content, establish an appropriate readability level, and provide for individual student differences, there was no evidence that most authors applied scientific principles.

Bierstedt (1955) discussed the role of textbook authors in transmitting knowledge and culture. The financial benefits offered by publishers to prestigious members of the educational community, rather than associational involvement or increased status, should be recognised as the main reason why authors write textbooks. The varying qualities of authors and the range of manuscripts modified into textbooks may reflect fluctuations in the business cycle at different times. Authors cannot readily be identified by demographic characteristics, such as age, sex and marital status. Association between authors, however, may be determined by political allegiance evident in the transmission of a culture in the form of manifest aspects or knowledge, as well as latent aspects or customs and myths. Ethnic heritage, regional variations in backgrounds, and the predominantly middle-class backgrounds of authors were likely to be reflected in the cultural values presented in their textbooks. Bierstedt classified the ideologies transmitted in textbooks by authors into four categories. First, the stimulus of financial gain motivating most authors was likely to be reflected in the presentation of an ideological preference for free enterprise. Second, the reflection of liberal political persuasions of most authors was likely to be tempered by the more conservative political ideology of the wider community. Third, the division of the educational system into public and Catholic sectors meant that authors presented either secular or religious values appropriate to the particular sector. Fourth, the academic status of authors may lead to a predilection to exaggerate the importance of intellectual curiosity, scepticism, or scientific method. The subject specialisation of an author may also lead to the depiction of professional bias towards the particular discipline conveyed in a textbook. Bierstedt concluded that whilst authors were subject to social and ideological pressures, they also contributed to changing values and attitudes through their textbooks.

Talmage (1986) asserted that teachers failed to accomplish the role of developing their own materials, because of the lack of time, expertise and funds. Whilst scholars developed materials during the curriculum reform movement, they failed to engage students because the concepts and language usage were too sophisticated. However, these groups play different roles in the publishing process. Scholars engage in research and extended

knowledge, whilst teachers reshape materials to fit students' needs. A third group, the interpreters or textbook authors, synthesise the contradictory theories of scholars, select the content most suited to a particular audience, arrange the findings in an appropriate form, and present the content clearly and in an interesting form. The activity of publishing materials involves bringing together the roles of scholars, interpreters, and teachers. Two-way relationships exist between publishers seeking teachers' needs and teachers identifying the available materials, and between publishers seeking out interpreters to develop materials and interpreters informing publishers about their ideas. The relationship between interpreters and teachers is generally one-way, although both groups may collaborate in developing materials. Whilst both interpreters and teachers look to scholars for current findings in a particular discipline, the former group draws more heavily on scholars' work. The publisher's role is especially important in finding out teachers needs for materials, and weighing up between conflicting demands of interest groups in providing the best materials.

2.2 Selection Process

Woodward et al. concluded that the large quantity of research on selecting materials, covering a multitude of discrete and overlapping topics, reflects the national concern in the United States to determine a valid selection process. An important topic in this body of research is formed by literature relating to the ongoing debate over state-level adoption. A large part of this literature has cast the debate in a framework of arguments presenting advantages and disadvantages of state-level adoption. The conduct of a series of research studies, analysing legislation and practices governing the selection of materials in the states, has been facilitated by the existence of a basic structure of adoption procedures since well before 1900. Another dimension has been directed to ascertaining the influence that large state-level adoption states, notably California and Texas, have had on the content of materials adopted elsewhere in the United States.

The following review covers the most significant literature analysing the influence of selection procedures by covering five aspects. First, the nature of selection procedures used in the states is analysed by reviewing the findings of large-scale studies conducted since the late 1920s. Second, the intents of state-level adoption are analysed by reviewing the findings of a study conducted in the 1980s. Third, the influence of large, state-level adoption states on the content of materials used elsewhere in the United States is analysed by reviewing literature published since the mid 1970s. Fourth, the nature of local-level selection procedures is analysed by reviewing the findings of two large-scale studies conducted in the 1970s and 1980s. Fifth, the outcomes of selection procedures at the local level in state-level and local-level adoption states are compared by reviewing the findings of a study conducted in the 1980s.

2.2.1 Overview of Selection Procedures

Presenting the earliest detailed account of selection procedures in the states, Tidwell (1928) analysed textbook adoption provisions in state laws, which were verified by a survey of state education agencies. It was found that state-level adoption was practised in 18 states from 1895 to 1897, 23 states from 1905 to 1907, 24 states from 1915 to 1917, and 25 states from 1925 to 1927. County boards of education adopted materials in nine states from 1895 to 1897, six states from 1905 to 1907, seven states from 1915 to 1917, and six states from 1925 to 1927. Local school boards adopted materials in 21 states from 1895 to 1897, 19 states from 1905 to 1907, 17 states from 1915 to 1917, and 17 states from 1925 to 1927. In the period from 1925 to 1927, state-level adoption at both the elementary and secondary levels was mandated in 16 states: Alabama; Delaware; Florida; Indiana; Kansas; Kentucky; Louisiana; Mississippi; North Carolina; Oklahoma; Oregon; South Carolina; Tennessee; Texas; Utah; and Virginia. Partial state-level adoption, restricted to the elementary level, was mandated in nine states: Arizona; Arkansas; California; Georgia; Idaho; Montana; Nevada; New Mexico; and West Virginia. Adoption by county boards at both the elementary and secondary levels was mandated in Iowa, Maryland, Missouri, South Dakota and Washington, but restricted to the elementary level in Wisconsin. Colorado, Connecticut, Illinois, Maine, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, Vermont and Wyoming practised local-level adoption. Analysis of data indicated that the adopting authority in state-level adoption states was usually vested in either the state board of education or specially appointed state textbook commissions. The members of these bodies were usually educators appointed to represent particular interest groups or geographical regions. With membership numbering from three to 13 persons, the terms of office varied from two years to an indefinite period. The general powers of adopting authorities were defined in laws relating to selection and adoption, and contracting publishers of adopted materials. Adoption lists generally specified a single textbook for each subject in each grade, although a few states adopted lists containing several materials. Seven local-level adoption states required school districts to select materials from open lists, containing materials offered by publishers, who had complied with requirements to supply their products at prices that were no higher than those prevailing in other states. Although the length of adoption varied from three years to an indefinite period, most state-level adoption states operated adoption cycles. Provisions governed other features in state-level adoption states. Supplementary materials were adopted in 21 states. The prices that publishers could charge for their materials were regulated in 38 states by limiting them to the lowest price prevailing in other states. The exchange of outdated for newly adopted materials was regulated in 30 states. School districts containing high urban concentrations were exempted from adoption requirements in 15 states. Adopting authorities in ten states

were given powers to administer all aspects of the selection process. Publishers were required to submit deposits with their bids in 16 states. Successful publishers were required to submit bonds in 29 states in order to guarantee that they carried out their contracts. Publishers were prevented from restricting free competition in 18 states. Publishers were required to maintain depositories in 19 states, whilst depositories were assigned by the adopting authorities in the remaining state-level adoption states to each county. Laws relating to the supply of free textbooks, operated through loans' systems, existed in 43 states. These laws were mandated in 20 states, with 14 states requiring textbooks to be supplied free to all grades, whilst the other six states limited the supply of free textbooks to the elementary level. Of the 23 states having permissive laws allowing school districts to elect the expenditure of funds to supply free textbooks, 20 states permitted textbooks to be supplied free to all grades. Provisions allowing for state-printed textbooks existed in five states, although state printing had only been practised in California and Kansas.

Coffey (1931) classified the prevailing procedures into five types, the former two constituting state-level adoption procedures, the third constituting an intermediate type, and the latter two constituting local-level adoption procedures. State textbook commissions or committees adopted materials in Alabama, Florida, Montana (elementary level only), Oklahoma, Tennessee, Texas, and Utah (urban areas excluded). State boards of education adopted materials in Arizona, Idaho, Indiana, Kansas, Louisiana, North Carolina (elementary level only), South Carolina, and Virginia. State textbook commissions or state boards of education, in conjunction with local school boards, adopted materials in Arkansas, California, Connecticut, Georgia, Kentucky, Mississippi, Nevada, New Mexico, North Carolina, Oregon, and West Virginia. County boards of education and local school boards adopted materials in Iowa, Georgia, Maryland, Missouri, North Carolina (secondary level only), South Dakota, Washington, and Wisconsin. Local school boards adopted materials in Colorado, Delaware, Illinois, Maine, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, Vermont, and Wyoming. Coffey found that adopting authorities in state-level adoption states were either elected or appointed, usually included the chief state school officer, and consisted of professional, non-professional and ex officio members. They generally adopted materials for five or six years through a written contract, required bonds from publishers, regulated prices, provided a distribution system with provision for depositories, and sometimes operated a state printing service. A similar situation prevailed in states of the intermediate type, but decision-making was diffused, and other provisions relating to the purchase and distribution of textbooks were less regulated in states operating local-level adoption procedures.

From an analysis of state legislative statutes, which was verified by a survey of state education agencies, Lange (1941) classified existing adoption procedures into four types. Florida, Indiana, Kansas, Kentucky, Louisiana, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, and Virginia authorised the state education agency to select and adopt materials, usually approving a single list for textbooks and a multiple list for supplementary materials. Alabama, Arizona, Arkansas, California, Georgia, Idaho, Mississippi, Montana, Nevada, Oregon, Texas, Utah, and West Virginia used various combinations of state and district control. Alabama, Idaho, Mississippi, Oregon, Utah, and West Virginia exempted certain school districts from using the state-adopted lists. Georgia, Montana, Nevada, and Texas exempted particular subjects from state adoption. Arizona, Arkansas, California, Idaho, Montana, Nevada, and West Virginia used open lists of approved textbooks for secondary schools. In Iowa, Maryland, Missouri, South Dakota, Washington, and Wisconsin, jurisdiction over adoptions was delegated to county boards with provisions for independent selections by certain school districts. Colorado, Connecticut, Delaware, Illinois, Maine, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, Vermont, and Wyoming used a system in which local school districts adopted their own materials. Delaware, Illinois, Michigan, Minnesota, Nebraska, North Dakota, Ohio, and Wyoming imposed a measure of state control through the use of open lists. In the remaining ten states, mandatory provisions were not used to control adoptions at the school district level. Lange also reported that 30 states permitted free textbooks to be provided to all or some students, whilst 17 other states permitted local school districts to provide free textbooks in their schools. Only Oklahoma did not provide mandatory or permissive legislation for free textbooks.

Reporting the findings of a survey of legislation conducted during 1948 and 1949, Burnett (1950) examined five issues: the types of adopting authority; the types of adoption lists; the availability of free textbooks; the sources of funds for textbooks; and the membership of adopting authorities. Burnett reported that 24 states applied state-level adoption, whilst the other 24 states applied local-level adoption procedures. State-level adoption was applied in Florida, Georgia, Indiana, Kansas, Kentucky, Louisiana, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. Urban areas were excluded from state-level adoption applied in Alabama, Delaware, Oregon, Utah, and West Virginia. Partial state-level adoption was practised at the elementary level only in Arizona, Arkansas, California, and Nevada. Partial state-level adoption was practised at the elementary level only with exclusion of urban areas in Idaho. County boards of education adopted materials in Iowa, Maryland, Missouri, South Dakota, and Washington. Local school boards adopted materials in Colorado, Connecticut, Illinois, Maine, Massachusetts, Michigan, Minnesota, Montana, Nebraska, New Hampshire, New Jersey, New York, North

Dakota, Ohio, Pennsylvania, Rhode Island, Vermont, Wisconsin, and Wyoming. The only change during the previous three decades reported was that Montana had abandoned state-level for local-level adoption in 1941. Burnett found that state-level adoption states usually listed single or several titles, and only rarely allowed selection from available materials. He also found that the provision of free textbooks was almost universal. However, there was no uniformity in funding sources for textbooks with states using state, county, district, or a combination of these sources. Burnett reported that state-level adopting authorities ranged in size from five to 13 members, who were generally appointed by the chief state school officer or the governor, and served from two to nine years. He found that state textbook commissions and committees contained a higher proportion of professional educators than state boards of education, and it was common for state-level adopting authorities to appoint subcommittees of professional educators to conduct preliminary reviews.

Durrance (1952) classified the prevailing procedures into five types, the former two constituting state-level adoption procedures, and the latter three constituting local-level adoption procedures. State textbook commissions adopted materials in Arkansas, Florida, Indiana, Kentucky, Nevada, Oklahoma, Oregon, South Carolina, Tennessee, Utah, and Virginia. State boards of education adopted materials in Alabama, Arizona, Arkansas, California, Delaware, Georgia, Idaho, Kansas, Louisiana, Mississippi, New Mexico, North Carolina, Texas, and West Virginia. County boards of education adopted materials in Iowa, Missouri, Nebraska, New York, and Washington. Local school boards adopted materials in California, Colorado, Illinois, Iowa, Maine, Michigan, Minnesota, Montana, New Hampshire, New Jersey, North Dakota, Ohio, Oklahoma, Pennsylvania, Vermont, Washington, and West Virginia. Local electorates adopted materials in Arkansas, Maryland, Massachusetts, Rhode Island, and Wyoming. A legal basis for the adopting authority applied in most states, but in a few states it was semi-legal, non-legal, or ex officio. Durrance reported that adopting authorities were generally composed of a combination of professional and lay people, but that some states had bodies composed of either group only. In some states, advisory bodies of professional educators assisted adopting authorities. He identified that some states required teachers to use approved reference materials as well as adopted textbooks, and that several states had provisions allowing teachers to use non-adopted materials under certain circumstances. Although most states provided adopted textbooks free, a number of states required students to purchase supplementary materials.

The Institute for Educational Development (1969) reported an extensive study of procedures used in the states to select materials. From an analysis of the statutes in the 50 states, it was identified that from two to eight units at the state, county, district and local levels were involved in the selection process. State-level adoption states commonly used

five units, whilst local-level adoption states usually used only three units. State-level adoption states were most likely to have special-purpose textbook selection committees as highly involved units, whereas local-level adoption states rested legal authority for selection most frequently with general-purpose groups, elected locally. Furthermore, chief state school officers and state boards of education played significant roles in the selection process in state-level adoption states, but only performed general supervisory roles in local-level adoption states. County units were equally important in both state-level and local-level adoption states, but were only predominant in Maryland and South Dakota. There was a marked difference between the roles of local-level units in state-level and local-level adoption states. In the former, the most frequent role involved choosing from lists prepared by state-level units, purchasing and distributing materials, whilst selection was the most frequent role in the latter. Limitations imposed in state statutes on the selection process were analysed for constraints on time, procedures and the contents of materials. It was found that state-level adoption states had longer time spans between adoptions, averaging five years. They usually had some form of procedural constraint on publishers, whereas 13 local-level adoption states did not specify any procedural constraint on publishers. However, similar proportions of both state-level and local-level adoption states specified substantive constraints on the contents of materials.

The differences between specifications in the statutes of state-level adoption states allowed four categories to be defined. The rigid state-level adoption states of North Carolina, South Carolina, Virginia, Texas, and Louisiana were characterised by adopting few materials, specifying more stringent enforcement procedures, and providing more comprehensive and detailed regulations for local selections. The moderately restrictive state-level adoption states of Alabama, Florida, Indiana, Mississippi, Tennessee, Oklahoma, and West Virginia had relatively short adoption periods, approved multiple adoptions, and provided for selection of supplementary materials locally. The flexible state-level adoption states of Kentucky, Oregon, Georgia, Kansas, Utah, Nevada, Wyoming and Alaska were characterised by considerable latitude in five aspects. Supplementary materials were selected locally, autonomy was provided to larger population centres, the numbers of adopted materials were not specified, adoption periods were short, and greater freedom was provided for the addition of new materials outside normal adoption cycles. California, New Mexico, Arkansas, and Arizona were termed partial adoption states, because they mandated state-level adoption for the elementary level only, which was generally rigorous, especially in the case of California. Five categories were determined from an examination of the statutes of local-level adoption states. Ohio, Illinois, Delaware and Michigan required state-level listing of materials adopted locally, combined with specified time limits for adoption. North Dakota and Rhode Island required state-level listing of materials adopted locally. Iowa, New York, Maine, Maryland, Montana, Washington, and South

Dakota specified time limits for adoption. New Jersey, Minnesota, Missouri, Wisconsin, and Pennsylvania specified the selection procedures to be followed in detail. Idaho, Massachusetts, Colorado, Connecticut, Nebraska, Vermont, New Hampshire, and Hawaii were classified as *laissez-faire*, because they had minimal state-level legal requirements.

The examination of state legislation was verified by a survey of state, county, and district participants in the selection procedures used in ten states: California; Connecticut; Florida; Georgia; Indiana; Montana; North Carolina; Ohio; Texas; and Wisconsin. This sample of states represented eight of the nine selection patterns identified from the classification derived from the examination of states' statutes. In addition, two states were added, one because it deviated from the general pattern geographically and the other because it was an important consumer of materials. Data were collected from 401 subjects by an interview schedule administered by project associates in each state. The findings indicated that selections were made in four ways. Individuals and groups of teachers selected materials in Wisconsin. Groups of teachers selected materials in Connecticut and California. Groups of teachers and administrators selected materials in Montana, Ohio, Georgia, Texas, Florida and Indiana. Groups of teachers and administrators or groups of administrators selected materials in North Carolina. Multi-stage procedures were used in all states, except for the multi-level procedure used in North Carolina. Subjects indicated almost complete freedom of choice in Connecticut, Wisconsin, California, Montana, Ohio and Florida with a wide range of choice in the four state-level adoption states of Georgia, Texas, Indiana and North Carolina. Relevance to the curriculum prevailed as the predominant selection criterion in all states, except North Carolina, with cost being the predominant decision criterion in most states. Subjects in most states cited teacher involvement as the most important strength of the selection procedure, but mentioned five main weaknesses. Time constraints existed in Connecticut, California, Montana, and Florida. Limits on individual knowledge occurred in Connecticut, Wisconsin, Ohio, and Indiana. Insufficiently specialised professional advice predominated in California and Texas. Insufficient information was available on products in Ohio and Georgia. The selection procedures were too centralised in Georgia and North Carolina.

The perceptions of publishers' representatives about the process for selecting materials were elicited in the study for four aspects: the locus of influence in each state; selection criteria; strategies and tactics of publishers; and constraints, strengths, weaknesses and trends in selection procedures. The sample consisted of 19 publishers' representatives, mainly sales managers and salespeople, from 15 different companies or organisations, who responded to a structured instrument and group interviews at informal meetings. Their views of the locus of influence in each state corresponded closely to the formal allocation of decision-making authority contained in state statutes. They viewed factors impinging on

specifying relevant criteria to be whether print or non-print materials were being selected, whether a teacher or an administrator was making the selection, and whether the selection was being made at the elementary or secondary levels. They perceived effective marketing strategies to be important influences in the selection process. Although they believed the major constraints on the selection of materials were economic, they viewed the conservatism of many educators as being significant in restricting the selection of innovative materials. They believed the involvement of many kinds of professional educators at many points in the selection process to be its greatest strength.

The study concluded that selection procedures were on the whole decentralised, highly differentiated, and unsystematic. Patterns of selection did not differ greatly between state-level and local-level adoption states. The systematic differences that were observed seemed to be based on the size of the local school district, whether it was located in an urban, suburban, or rural area, its social and economic characteristics, and the attitudes of school personnel who were influential and involved in selecting materials. Local patterns for selecting different types of materials did not seem to differ, except in rigid state-level adoption states where supplementary and non-print materials were not selected by the same procedures as textbooks. Planned, systematic intervention to change the prevailing procedures for selecting materials was perceived to be extremely difficult, because of their complexity, decentralised and unsystematic natures, and dependence on local variations.

2.2.2 Intents of State-Level Adoption

Tulley (1983) investigated the intents of state-level adoption by conducting content analyses of states' statutes, documents and policy statements, interviewing administrators in the 22 state-level adoption states, and undertaking an in-depth case study in eight local school districts in Indiana.

In a synthesis of the study, Tulley (1985) argued that the policy impact of state-level adoption was speculative, because of the absence of definitive research findings and the lack of insight into this issue that could be gained from reviews of professional literature and publications of state education agencies. Therefore, improvements to selection and adoption policies were more likely to be soundly based, if the purpose of the study was to inquire into policy intent, efficacy and impact, and it was designed to test hypotheses. The findings indicated that the practice of state-level adoption in the 22 states was based on nine intents. First, it controlled the cost of materials, or kept the cost as low as possible. Second, it controlled the marketing practices of the publishing industry. Third, it provided for public participation in the adoption process. Fourth, it ensured the periodic review and purchase of materials. Fifth, it saved time and work for local school districts. Sixth, it provided structure and organisation for the selection and adoption process. Seventh, it

gave the state responsibility for potentially controversial materials. Eighth, it ensured some degree of state wide curricular uniformity. Ninth, it ensured the selection of high quality materials. From the analysis of data from all sources, Tulley reached four conclusions. First, individuals interviewed expressed a high degree of agreement that particular issues did, or did not, pertain to the intent of state-level adoption. Second, there was a high degree of agreement that the nine intents pertained to the purpose of state-level adoption. Third, the purpose of state-level adoption was most closely associated with three intents: controlling the cost of materials; guaranteeing curricular uniformity; and ensuring high quality in materials. Fourth, areas of overlap were identified among several of the nine issues.

The findings of the study suggested two implications for practice. The first pertained to making individuals involved in the process of state-level adoption more aware of what the procedures were designed to accomplish through explicit statements of intent. The second related to considering alternative practices through which the intents would be achieved more effectively. Seven improvements to the procedures of state-level adoption were recommended. Clear, highly specific procedures should be developed and conveyed to participants. Procedures should be instituted to review and select materials that enter the marketplace during the adoption cycle, thereby making the process on-going instead of periodic. Guidelines governing marketing practices should be developed for the local level, and conveyed to participants. Provisions should be implemented to ensure and solicit public participation in state-level adoption procedures. Guidelines should be developed requiring challenges to be directed to state-level adopting authorities, or technical assistance in this area should be provided to local school districts. Procedures should be implemented to control the cost of supplementary as well as basic materials. A state-level curriculum review should be conducted before instigation of the adoption cycle in order to specify and present evaluation criteria in curriculum guides.

2.2.3 Influence of State-Level Adoption States

The inordinate influence that large state-level adoption states, notably California and Texas, have on the content of materials arises from publishers coordinating the development and publication of new materials to the adoption cycles of these states in an attempt to increase sales and restrict competition. Such coordination leads publishers to submit materials to these two states at an early stage to give an opportunity for adoption, rejection, or approval, if specified changes are made. Although special editions are occasionally published to meet these states' requirements, usually the altered materials are marketed across the United States. Since Texas' influence on content has been generally more conservative than California's influence, publishers attempt to produce materials, which reflect these competing demands. Although the overall impact of these compromises on content in

materials is difficult to assess, its effect, often referred to as the 'California effect' or the 'Texas effect', has been widely accepted in publishing and educational circles for many years.

This issue has been examined in a published literature dealing with a range of topics. Crane (1975) reported evidence that revisions of textbooks to meet state-level adoption requirements in California were incorporated into editions marketed nationally. Crane argued that the advent of a multiple adoption list in California in 1972 included an option for publishers to make changes to their materials to meet state-level adoption requirements, thereby incorporating such changes into publishers' national editions. Bowler (1978) discussed ways publishers attempted to match the content of their textbooks to the procedures used in state-level adoption states, and how the content of reading materials was influenced by these demands. English (1980) examined the significance of the influence that large state-level adoption states have on political considerations in the selection and adoption of materials, arguing that state-level adoption procedures played a major role in homogenising and sterilising the content of textbooks. Moyer (1985) discussed how conservative censorship groups, represented by Mel and Norma Gabler, manipulated the state-level adoption procedure in Texas to influence the coverage of such topics as evolution and human sexuality in science textbooks marketed nationally. Schomburg (1986) discussed how the combination of state-level adoption, publishers' interests, and conservative censorship groups represented by the Gablers, affected the selection of textbooks in Texas, and ultimately influenced textbook content nationally. Sturm and Weiss (1988) challenged the view that the 'Texas effect' influenced the adoption of geography textbooks elsewhere by reviewing and comparing data on adoption lists for geography textbooks in all state-level adoption states, finding its influence was minimal.

2.2.4 Nature of Local-level Selection Procedures

From surveying a sample of 1,275 school districts in 33 states and the District of Columbia, Kunder (1976) reported on responses elicited from 414 school districts. The findings indicated that 72.7 percent had developed policies for selecting basal materials, whilst 50.7 percent stated they had policies for selecting supplementary materials. Of the 306 school districts in the responding sample that had selection committees, 22.9 percent functioned as part of general curriculum committees, 72.2 percent operated independently, and 1.6 percent had both a separate selection committee and one that was part of the general curriculum committee. Of these 306 districts, 19.6 percent had one district-wide committee, 47.7 percent had separate district-wide committees for elementary and secondary levels, 5.6 percent had committees based in separate school buildings, 13.7 percent had separate subject area or grade level committees, and 10.8 percent used a combination of these types. The functions of selection committees varied among this group. Of these 306 districts, 52.6

percent reviewed and recommended materials to another group or individual for adoption, 27.8 percent reviewed and selected materials subject to approval, 18.6 percent reviewed, selected and approved materials, and 1.5 percent had different functions at the elementary and secondary levels. Of the 246 school districts in which selection committees did not approve materials, responsibility for adoption rested with different groups. Local school boards were responsible for approval in 51.0 percent of cases. District superintendents were responsible in 4.6 percent of cases. Local school boards and district superintendents were responsible in 2.9 percent of cases. School principals were responsible in 6.2 percent of cases. Teachers were responsible in 3.3 percent of cases. School principals and teachers were responsible in 5.9 percent of cases. Other combinations were responsible in 6.5 percent of cases. The basis for the composition of selection committees varied in the 306 school districts that had selection committees. Composition was specified by policy or statute for 48.7 percent, was not specified by policy or statute but the positions remained the same for 14.7 percent, and was not specified by policy or statute and varied with each election of committee members for 36.6 percent. Of the committees in the 306 districts, 63.7 percent did not specify lengths of time that committee members may serve, whilst 35.3 percent did specify lengths of time that committee members may serve. In this latter group of 108 committees, 25.9 percent of members served for one year, 33.3 percent of members served for from two to three years, whilst 18.5 percent served until the task was completed. Selection committees in the 306 school districts were chosen in many ways, but four predominated with 17.0 percent being appointed by the district superintendent, 16.7 percent being chosen by constituent groups, 10.1 percent being volunteers, and 9.2 percent being chosen by both the district superintendent and constituent groups. Of the 306 districts, 42.8 percent released administrators from other duties to serve on selection committees, and 51.3 percent released teachers from other duties to serve on selection committees. Of the committees in the 306 districts, 87.6 percent provided opportunities for publishers to meet with committee members. Of the 414 districts responding to the survey, 74.6 percent had negotiated agreements with teachers concerning participation on selection committees, but only 22.3 percent of this group contained provisions for teacher participation.

From surveying a proportionally stratified nationwide sample of 2,482 principals, 2,498 superintendents, 1,249 school librarians and 1,342 district level library supervisors, Kamhi (1981) reported data on responses elicited from 1,891 subjects, as well as interviews with state-level administrators in the 22 state-level adoption states. The former group indicated that selection of materials presented a complex pattern. Local school districts were reported by 50.4 percent of the respondents to be responsible for selecting basal materials. Local school districts were reported by 72.7 percent of the respondents to be responsible for selecting supplementary materials. State-adopted lists were reported by 28.3 percent of the

respondents to be used for selecting basal materials. State-adopted lists were reported by 5.6 percent of the respondents to be used for selecting supplementary materials. County-adopted lists were reported by 4.0 percent of the respondents to be used for selecting basal materials. County-adopted lists were reported by 2.4 percent of the respondents to be used for selecting supplementary materials. City-adopted lists were reported by 1.5 percent of the respondents to be used for selecting basal materials. City-adopted lists were reported by 1.5 percent to be used for selecting supplementary materials. The selection of basal materials was reported by 2.6 percent of the respondents to be done by different procedures at the elementary and secondary levels. The selection of supplementary materials was reported by 4.9 percent of the respondents to be done by different procedures at the elementary and secondary levels. The respondents indicated that selection policies were developed and approved at six levels. Policies were reported by 6.9 percent of the respondents to have been developed at the state level and by 6.3 percent of the respondents to have been approved at the state level. Policies were reported by 9.3 percent of the respondents to have been developed at the county level and by 9.7 percent of the respondents to have been approved at the county level. Policies were reported by 3.8 percent of the respondents to have been developed at the city level and by 3.6 percent of the respondents to have been approved at the city level. Policies were reported by 55.3 percent of the respondents to have been developed at the school district level and by 64.6 percent of the respondents to have been approved at the school district level. Policies were reported by 13.1 percent of the respondents to have been developed at the school building level and by 8.9 percent of the respondents to have been approved at the school building level. Policies were reported by 10.1 percent of the respondents to have been developed at the school department level and by 6.0 percent of the respondents to have been approved at the school department level. The administrators in the former group indicated that selection committees in their school districts performed several functions. Selection committees were reported by 32.1 percent of the respondents to review and recommend materials, by 48.3 percent of the respondents to review and select materials, and by 10.2 percent of the respondents to review, select and adopt materials. The administrators also indicated that particular groups were permitted to make presentations to selection committees in their school districts. Publishers' representatives were reported by 92.4 percent of the respondents to make presentations to committee members. Special interest groups were reported by 57.8 percent of the respondents to make their views known to committee members. Selection committees were reported by 59.8 percent of the respondents to provide information to the community about controversial materials.

The administrators, who supervised selection procedures in the 22 state-level adoption states, indicated that state-level adoption applied to different materials across these states. Basal materials were adopted at the state level for the elementary level in 22 states, and for

the secondary level in 19 states. Supplementary print materials were adopted at the state level for the elementary level in 11 states, and for the secondary level in nine states. Non-print materials were adopted at the state level for the elementary level in eight states, and for the secondary level in five states. They indicated that state-level selection procedures were conducted in several ways: eight states had a single selection committee; ten states had separate selection committees for different subject areas; and four states used other ways. They also stated that adoption policies stipulated particular conditions. The composition of selection committees was specified in 18 states. Publishers' representatives were permitted to make presentations to selection committees in 19 states. Special interest groups were permitted to make their views known to selection committees in 14 states. Authors, publishers, or producers were permitted to defend materials challenged during the selection process in 12 states. Selection committees provided information to the community on controversial materials in nine states.

2.2.5 Comparisons between Local-Level Selection Procedures in State-Level and Local-Level Adoption States

Farr et al. (1987) compared the outcomes of local-level selection procedures by examining the statutes in each state to identify similarities and differences, interviewing state-level administrators in each state, and surveying a sample of 550 elementary school principals, evenly divided between local school districts in state-level and local-level adoption states. Of 303 responding principals, 159 were from local school districts in state-level adoption states and 144 were from local school districts in local-level adoption states. The analysis of the statutes in the 22 state-level adoption states identified prescriptions relating to nine categories: the adopting authority; subcommittees and commissions; curricular responsibilities; selection of the adopting authority; composition of the adopting authority; specified cycles and numbers of materials; specified criteria; public participation; and publisher requirements and restrictions. On the other hand, the subject matter of the statutes of the 28 local-level adoption states was discovered to be more diverse, and not similar enough to form clearly defined categories. The interviews with state-level administrators focused on the prices of materials and adoption cycles. It was found that administrators in the state-level adoption states commonly held that local school districts in local-level adoption states could not pay less for materials because state-level contracts required prices to be as low as available elsewhere, and that in the absence of state-level controls, prices would be greater. Administrators in every local-level adoption state, except six which applied state-level controls over prices, believed that local school districts were paying as much or more than in state-level adoption states, because of the lack of volume purchasing powers and state-level controls. Most administrators in state-level adoption states believed the local school districts in local-level adoption states were using older materials, because established adoption cycles in state-level adoption states required local

school districts to adopt new materials regularly. State-level administrators in local-level adoption states held a different view, however, indicating that local school districts operated voluntary adoption cycles. Of the 303 responding principals, more than 80 percent in both state-level and local-level adoption states indicated that adoption cycles running from five to six years were applied, which supported the view that there was no difference in the currency of materials used in local school districts for both types. However, 47 percent of respondents from state-level adoption states believed the prices of materials were the same or lower than those offered in local-level adoption states. On the other hand, 41 percent of respondents from local-level adoption states believed the prices of materials were the same or higher than those offered in state-level adoption states. A comparison of actual prices paid for a particular reading material indicated that prices paid in state-level adoption states were significantly lower than prices paid in local-level adoption states. Farr et al. concluded that whilst the costs of materials for local school districts in state-level adoption states were significantly lower, there was no significant difference in the length of time or the medium of adopted materials used in local school districts in either type. They argued that local school districts in both types of states achieved the same end, but through different means. Therefore, quality in materials and the curriculum could be achieved without state-level adoption.

2.3 Use and Curriculum Role

Woodward et al. interpreted recent research into the use and curriculum role of textbooks in American schools to be a response to the two main dimensions of the educational reform movement during the 1980s. They related the first, initiatives to increase the level of student achievement, to the dependence of students on textbooks, and the second, initiatives to strengthen professional control, to the reliance of teachers on textbooks. Furthermore, Woodward and Elliott (1990) argued that the heavy use and, in many cases, dependence of teachers on textbooks was a central issue in professional practice. The findings of other research, however, have challenged the assumption that teachers follow the curriculum presented in textbooks, teacher's guides and other materials with an unquestioning acceptance. It asserts that variations in the use of materials occur across subject areas, and through personal choices about the content of materials and their use. Consequently, Sosniak and Stodolsky (1993) defined two waves of recent research on textbooks and other materials, with the first assuming the direct influence of textbooks and other materials on teaching and learning without demonstrating it, and the second emphasising that teachers do not use them with fidelity.

Using the conclusion reached by Sosniak and Stodolsky about the nature of the research literature on the use of textbooks, the following reviews cover two main aspects. First, the view that many teachers and students are dependent on textbooks is analysed by reviewing

research studies on the use of materials published from the beginning of the twentieth century until the late 1980s. Second, the view that teachers do not use textbooks with fidelity is analysed by reviewing research studies published in the 1990s emphasising the differential use of materials by teachers and students.

2.3.1 Teacher Dependence

Published research studies indicate that the dependence of teachers and students on textbooks has been accepted in educational circles since the beginning of the twentieth century. From an analysis of twelve reported studies of school systems across the United States published between 1898 and 1929, Bagley (1931) found that the earlier studies attributed teachers' dependence on textbooks to practices of rigid state-level adoption. However, later studies held that the poor quality of teaching was responsible for such dependence. In the same article, Bagley also reported a survey, conducted for the National Society for the Study of Education, in which field researchers based in thirty states used a checklist to report on different methods of using textbooks in 539 classrooms. It was found from the use of twenty designated methods that 13.1 percent of 1,014 instances in which these methods were used involved 'recitation largely reproduction of assignment from a single textbook'. Further analysis showed that the highest use of this method was found in high schools, and was also associated with teachers of limited qualifications and experience. It was also found that dependence on a single textbook was prevalent in all regions of the United States, except for New England and the Pacific Coast states.

In the only extensive study on the use of materials, the Educational Products Information Exchange Institute (1977) found that teachers depended on a relatively small number of most frequently used materials. From a nationwide stratified sample of 39,739 teachers of mathematics, reading, science and social studies, a total of 12,389 teachers responded to questionnaires mailed during 1974 and 1975. The findings of this study, known as the National Survey and Assessment of Instructional Materials, indicated from responses to the survey and inventories of materials that 25 to 30 percent of available materials were used extensively. The proportion of time spent by respondents averaged 63 percent of class time for print materials and 33 percent of class time for non-print materials. The curriculum designs of the majority of the most frequently used materials in all four subjects were traditional, although innovative materials were more commonly found in social studies. Of 9,894 responding teachers who had received a follow-up questionnaire, 85 percent of the 894 respondents perceived that the materials they most frequently used met the needs of specific learning environments. An analysis of the data from all responding teachers indicated that there was a strong correlation between teacher experience and teacher perception of the performance of materials, but a weak correlation between teacher attitudes and teacher perception of the performance of materials. In comparing data

between teachers who indicated they took part in selecting the materials they used and teachers who played no role in selection, no relationship was found between student learning and teacher participation in the selection process. The overwhelming majority of the 894 respondents to the follow-up questionnaire reported being aware of the values' systems inherent in the materials they most frequently used. In spite of the conclusive findings of the study, it was not possible to estimate the proportion of students across the United States who used the materials dominating the market. Compiled by 471 responding teachers, a list of 84 most frequently used materials, which was presented to the other respondents, confirmed that 70 of these materials were frequently used.

Several researchers reporting on the use of materials in particular subject areas also identified patterns of dependence. In reading, the findings suggested a close adherence to text material in that basal reading passages appeared to be used in sequence and generally without omissions. Barton and Wilder (1964) reported a survey of 1,580 teachers from two groups of elementary schools, one a nationwide random sample and the other a sample of schools chosen as representing high-quality educational practice, undertaken during a study on the sociology of reading conducted by Columbia University in 1961. They found that 98 percent of grade 1 teachers and 92 percent of grades 2 and 3 teachers used basal readers on 'all or most days of the year'. The same respondents' attitudes categorised according to group indicated in the case of 62 percent of the random sample and 67 percent of the high-quality sample that basal readers were absolutely essential for teaching reading. However, only 40 percent of principals and 28 percent of reading experts considered they were absolutely essential.

From a survey of articles on reading research appearing in *Language Arts* and its predecessors, *Elementary English* and *The Elementary English Review*, between 1924 and 1982, Shannon (1982a) found that many authors recognised teachers' dependence on reading materials. However, they recommended changes to teachers' behaviour without analysing possible causes for their dependence. Shannon (1982b) reported from a survey of teachers and administrators that, whilst the latter believed in the authority of textbook content, the former relied on textbooks because of perceived demands by administrators. In testing a model of reading programs derived from this evidence, Shannon (1983) found that reading instruction was standardised by the use of basal readers and objective testing. Furthermore, Shannon (1987) argued from the findings of previous research studies that whole language experts have encouraged the use of reading materials as a way of incorporating scientifically valid procedures and business principles into classroom instruction, thereby reducing teachers' and students' roles in reading instruction.

2.3.2 Teacher Independence

Case study and ethnographic research, conducted since the late 1980s, has challenged the assumption that teachers show a uniform pattern in using materials. From observing two groups of grade 5 teachers, Stodolsky (1989) reported that their preferences, the nature of the materials they used, the context in which they taught, the particular students in their classes, and the subject matter influenced the ways they used materials. One group of six teachers varied considerably in their use of mathematics textbooks, adhering to textbook topics but departing from activities in the textbooks, whilst another group of six teachers covered the topics sequentially as presented in social studies textbooks, but introduced distinct and unrelated topics. From interviewing 44 secondary school students about their learning experiences in mathematics, English and history, Sosniak and Perlman (1990) reported that teaching and learning were dominated by the use of textbooks, although they were used in different ways for different subjects. They concluded that the variance across subjects was a consequence of publishers' and teachers' views of teaching and learning in different subjects. From observing nine, grade 4 teachers using textbooks in science and social studies, Armbruster et al. (1991) reported that students read more text in social studies than in science. However, few of the teachers' questions were derived from the text, and few questions related directly to the text being read by students. Sosniak and Stodolsky (1993) reported from observing the use of materials by four grade 4 teachers that each teacher used a range of materials in distinctive ways across reading, mathematics and social studies. Patterns of use and thinking about materials were inconsistent across subjects even for a single teacher, materials were valued by teachers because of their appeal to students, inclusion of valuable content and time-saving aspects, and the conditions of teachers' work influenced their selection and use of materials.

Several researchers reporting on the use of materials in particular subject areas confirmed this pattern. From interviewing 18 elementary teachers about the influence of nine variables affecting the content of mathematics programs, Schmidt et al. (1987) reported that decision-making assumed four patterns. Six teachers followed only the content defined in textbooks. Six teachers were influenced predominantly by the content of textbooks, but were also influenced by student ability. Three teachers were influenced mainly by district objectives and used a range of materials extensively. Three teachers were influenced mainly by past experiences and personal conceptions of mathematics. From case studies of nine grade 4 teachers, Barr (1988) reported that seven teachers followed the content in mathematics textbooks from chapter to chapter, spending a high proportion of time in review activities. However, the other two teachers used textbooks flexibly by omitting lessons, reordering chapters and using supplementary materials, thereby spending a higher proportion of time on new subject matter. From observations and interviews involving seven grade 4 teachers, Barr and Sadow (1989) reported that they covered topics more consistently in traditionally designed reading materials, but omitted many topics from

more complex materials, whilst differing in their reliance on recommendations presented in teacher's guides provided for the materials. From observations of four grade 4 teachers on their use of mathematics textbooks, Freeman and Porter (1989) reported that there were important differences between text content and each teacher's topic selection, content emphasis, and sequence of teaching.

2.4 Conclusion

The findings of the examination of research literature have emphasised the evolution of the main facets of the publishing industry in the United States since the mid-nineteenth century. These facets include the roles of authors, editors and sales people, changes occurring from the introduction of new technologies in printing and new media in products to the issues of corporate takeovers and mergers in the publishing industry, and the place of newly emerging small companies as niche publishers. Commentators reporting on publishing in the 1950s and 1960s depicted an industry in which the publishing process and the roles of authors, editors and sales people had been institutionalised for many years. On the other hand, the publishing industry of that time was faced by the challenges of integrating new technologies in printing and new media for presenting materials. Writers in the 1990s, however, have been more concerned to analyse changes in the publishing industry occurring in response to globalisation. Mergers and takeovers, resulting from reductions in profit margins faced by many publishing companies, led to the incorporation of publishing activities within multinational media, communications and entertainment conglomerates, whilst new emerging publishers filled a vacuum in the marketplace as niche publishers. The more competitive financial environment of the 1990s concentrated the publishing of most materials in the hands of a few large publishing houses, whilst small niche publishers struggled to survive precariously at the margins of the marketplace. The marketplace portrayed by commentators in the 1990s presented a substantially different environment in the world of publishing than depicted by writers in the 1950s.

Since few commentaries have been published about the publishing industry in either the United Kingdom or Australia, generalisations are based on the assumption that the evolution of its main facets in these two countries has been similar to that in the United States. There is no evidence to suggest that the roles of authors, editors and sales people, and the impact of changes occurring from the introduction of new technologies in printing and new media in products in the 1950s and 1960s were markedly different in the United Kingdom and Australia. Whilst globalisation has affected the publishing industry in the United Kingdom and Australia during the 1990s by forcing mergers and takeovers, it seems not to have produced the same degree of concentration of publishing activities into the hands of a few large publishing houses. Furthermore, anecdotal evidence suggests that the publication of materials in the United Kingdom and Australia is not so highly concentrated

in the hands of the publishing industry, but benefits from the greater involvement of governmental agencies.

Research literature investigating selection procedures used in the states of the United States has stressed the differences between the levels of decision-making occurring between centralised, state-level adoption and decentralised, local-level adoption. The findings of research studies indicate that the decision-making process is more clearly delineated in centralised systems than in decentralised systems. The findings also show that both state-level and local-level adoption procedures are characterised by inherent weaknesses and strengths. Whilst its main strengths appear to be associated with controlling the cost of materials, ensuring curricular uniformity, and promoting high quality materials, state-level adoption is open to several potential weaknesses. These are associated with favouring bureaucratic decision-making at the expense of teachers' rights to decide the best materials, failing to provide sufficient funds and time to select materials, and failing to insulate the selection process from control by commercial and political pressure groups. Although local-level adoption procedures may be more responsive to the needs of local educators in selecting materials that meet their students' needs, their main weaknesses are related to the lack of uniformity and an inability to project a particular set of demands. The prescription of statutory provisions in the adoption procedures of state-level adoption states in the form of state-level controls over prices, together with the potency of volume purchasing power, acts as a powerful force in influencing the content of materials marketed elsewhere across the United States. On the other hand, the findings of research studies investigating procedures used to select materials at the local level show that the patterns of these practices are complex in both state-level and local-level adoption states. Furthermore, comparison of local-level selection procedures in state-level and local-level adoption states shows that whilst the practice of state-level adoption reduces the cost of materials, it makes no significant difference to the medium of materials or the duration for which they are used.

As the responsibility for selecting materials lies mainly with schools, but to some extent with unitary awarding bodies in the United Kingdom and state accreditation agencies in Australia, the process of decentralised decision-making in these countries more closely resembles that of local-level adoption states in the United States. Research studies investigating selection practices used in the United Kingdom and Australia have confirmed the decentralised nature of the procedures. The findings indicate that different groups or individuals are responsible for selecting materials at the school level. The diffuseness of the decision-making process used to select materials in schools shows that whilst educators may be highly involved in the decision-making process, they fail to project a particular set of demands to producers of materials. Attention has not been given in research literature to

the interaction of particular variables in the decision-making process within different settings on influencing the content of materials.

Research literature on the use and curriculum role of materials in the United States has stressed that teachers and students depend on such materials. Two studies reported from as widely apart as the 1930s and the 1970s indicated that teachers used relatively few of the materials available in the marketplace. The widespread use of a small body of materials was associated with their use for a high proportion of time in classrooms. Both studies indicated that dependence on such materials was also associated with teachers' degree of experience. Beginning in the late 1980s, case study and ethnographic research involving small numbers of teachers and students indicated that they varied in their patterns of using materials. Such findings challenged the generalisation that teachers and students depend uniformly on materials without necessarily undermining the finding from earlier research that held a substantial number of teachers used a relatively small number of the available materials for a high proportion of classroom time.

Research studies into the use and curriculum role of materials in British and Australian schools have focused on identifying patterns whereby materials are disseminated to schools, managed within schools, and used in classrooms. An explanation for the implicit rationale and designs applied in these research studies should be sought in processes devised during the curriculum reform movement for verifying the effectiveness and use of materials. The scope of these research studies has included neither the issue of teacher reliance on materials nor teacher independence of materials. Therefore, comparable findings to those reported from research studies in the United States on the extent to which teachers depend on or are independent of materials are unavailable in British and Australian settings.

The examination of the research literature concerning the role of the publishing industry, the patterns controlling selection and use of materials, and their curriculum role in the United States shows that these activities interact within a national materials' marketplace. The nature of the materials' marketplace in the United States is examined in Chapter 3 by considering the impact of the educational reform movement on the system for developing, selecting and using materials.

CHAPTER 3

THE MATERIALS' MARKETPLACE: A MODEL FOR DECISION-MAKING

The interactions between publishing companies, selection committees and school communities over how materials are produced, selected and used led to a system being assembled to regulate these activities in the United States. This system evolved over more than 150 years from strategies used by publishing companies to market their products in a frontier society and elected officials to control the excesses of the publishing industry by enacting textbook adoption laws. This complex set of regulations represents an intentional effort to control the operations of the materials' marketplace.

The purpose of this chapter is to examine the concept of the 'materials' marketplace' in the context of standards-based or curriculum reforms as a basis for defining a typology to classify phenomena relating to the development, selection and use of materials. Initially, models of the materials' marketplace are described with reference to available literature on this topic. Then, a case study is presented to illustrate the effect of educational reform on the materials' marketplace. Strategies suggested and initiatives taken by policy-makers to change the system in the United States are examined by concentrating on the work of an advocate, who played a key role in promoting reform of this system. Finally, a typology for classifying phenomena relating to the development, selection and use of materials is constructed with reference to models of educational evaluation.

3.1 Materials' Marketplace

The complex process by which materials move from publishers to teachers and students in classrooms has been the subject of postulation in the United States since researchers and commentators realised that textbooks and other materials form an important element in any reform effort. The concept of a 'materials' marketplace', in which producers, selectors and consumers interact within political, economic, social and legal contexts, first appeared in educational literature published in the late 1970s.

3.1.1 Models of the Materials' Marketplace

Clearly detailing a conceptual model of the materials' marketplace for the first time, Goldstein (1978) concluded from an examination of its four central features that the political, social and economic forces in which producers and consumers operate shape the materials' marketplace. First, major trends in the development of textbooks, audiovisual materials, teaching machines, computers and innovative approaches to teaching and learning, such as inquiry learning, were met by largely unsuccessful attempts at testing the efficacy of materials in classrooms. Second, conservatism in purchasing materials was

promoted by patterns of selecting materials in both state-level and local-level adoption states, which involved imposing checks and balances on diverse groups thereby permitting each to have some say in the selection process. Third, the relatively small size, moderate degree of concentration, calculated competitiveness, and limited invention of companies involved in the publishing industry failed to attract investment for making innovative changes to products. Fourth, programs sponsored by private foundations, but more particularly by the federal government aimed at developing new materials or for state and local education agencies to purchase new materials, were ineffective, unless supported by efforts aimed at disseminating and facilitating the use of materials in schools. Goldstein argued that these features combined to obstruct needed changes in improving the quality of materials. Copyright and patent laws offered no incentive to invest in significant research and development, whilst initiatives for changing schools through increased accountability, performance contracting, and voucher programs were compromised by political decisions at the federal, state and local levels. Goldstein concluded that until schools overcome their resistance to change, it is unlikely that the quality of materials will improve.

The concepts identified by Goldstein appear to have been defined for the first time as a physical model by Komoski (1977). Komoski reported that this model was envisaged in response to an article written by Broudy (1975), a former textbook editor, who concluded that the materials' marketplace is driven by economic forces encapsulated in the frequently-espoused maxim of the textbook publishing industry: "Kids don't buy books, teachers do". In its final form, the model proposed by Komoski (1985), which he termed the Schema of the Materials' Marketplace, consists of five stages: the education industry; state education agencies or local school districts; school buildings and classrooms; classrooms and homes; and homes and businesses. Illustrated as Figure 1, this schema defines criteria which affect materials as they proceed through a complex set of interactions between publishers' production and marketing strategies, committees' selection procedures, and consumers' patterns of use analysed through five attributes: marketplace setting; predominant values; 'evaluators'; evaluative criteria; and evaluative feedback.

3.1.2 Impact of Reform on the Materials' Marketplace

3.1.2.1 Prospects for Reform

Efforts to change this system led researchers to comment critically on the shortcomings of the existing system and its impediments to implementing educational reforms, and to discuss the prospects for its reform.

Tyson-Bernstein and Woodward (1986) argued that this system, which represents an outmoded relic established a century ago, has been adjusted at the occasion of each crisis to

FIGURE 1

SCHEMA OF THE MATERIALS' MARKETPLACE (after Komoski, 1985)

Marketplace Setting	Predominant Values	'Evaluators'	Evaluative Criteria	Evaluative Feedback
Education Industry	<i>corporate</i>	<i>developers/producers</i> (companies)	<i>feasibility</i> (Can it be made at a reasonable cost?) <i>marketability</i> (Will it make it in the market?) <i>profitability</i> (Will it make an acceptable profit?) <i>acceptability</i> (Will it be accepted by committees and teachers?) financial bottom line (Will it pay?)	Feedback loop necessary for continuous improvement of materials' ability to communicate effectively to learners is hardly, if ever, closed. The ultimate consumers' experience with materials seldom is a factor that shapes the decision-making of the education industry, state agencies, school boards, and/or school selection committees. (This is less so when good teachers, who are sensitive to learning needs are given the permission, the training, the time, and support to select materials.)
State Education Agencies or Local School Districts	<i>societal</i>	<i>screeners/adopters</i> (committees)	<i>contents</i> (philosophy and coverage) <i>acceptability</i> (ethnic, racial, religious, sex fairness) <i>useability</i> (by teachers and learners, durability) <i>cost</i> (initial and continuing) educational/social bottom line (Should it have its day or should it stay?)	
School Buildings and/or Classrooms	<i>group/pragmatic</i>	<i>selectors/prescribers</i> (teachers)	<i>contents</i> (appropriateness, coverage, objectives) <i>understandability</i> (by learners) <i>useability</i> (ease of use and durability) <i>likeability</i> (reactions of kids) instructional bottom line (Will it play?)	
Classrooms and Homes	<i>personal/affective/utilitarian</i>	<i>user/learners</i> (ultimate consumers)	when in school: Do I enjoy it? Does it make clear what I am to do? Can I do it? Of what value is it to me?	
Homes and Businesses	<i>personal/utilitarian/spiritual</i>	(ex-students)	when an adult (non-teacher): Was it of value to me? Is it what I want my child to learn? Did it help prepare me to function well as an adult? Will it prepare my child well for the future?	

meet stresses experienced in synchronising the workings of its four component institutions. Competing pressures arise from publishing houses driven by profit motives, elected boards in states and local school districts responding to their electorates, the public school establishment's debates over teacher autonomy and centralised control, and academic scholars lobbying for new knowledge to be included in the curriculum. Tyson-Bernstein and Woodward concluded that a greater understanding of the effects of this system on the processes for developing, marketing and selecting materials, together with a national consensus on changing the processes for specifying bids and approving adoptions, form the best hope for reforming the system. Social studies could form an appropriate testing ground for this strategy by developing state and local curricula, supported by materials developed specifically to meet the needs of these curricula.

In elaborating on this position, Tyson-Bernstein and Woodward (1991) asserted that the system of rules, regulations and practices, which the states established a century ago as sensible and practical solutions for selecting materials, is now obsolete, because its bureaucratic structures impede educational reform. This system is sustained by a common set of seven assumptions about the relationship between materials and schooling. First, the assumption that selected materials reflect state or local curricula in terms of content, teaching and learning approaches, and sequence devalues curriculum planning, and overvalues the consequences of decision-making in the selection process. Second, the assumption that materials provide a guaranteed means to ensure that students learn reduces the competence of teachers. Third, the assumption that accountability, shown through evidence of student achievement, can be met by correlating content in materials with standardised tests, produces skill-based teaching and learning. Fourth, the assumption that matching a material's score on a readability formula to average scores of students' reading achievement for each grade establishes a correct reading level for the text, leads publishers to employ bad writing practices in developing new materials. Fifth, the assumption that a material's currency of publication should form a criterion for adoption leads publishers to produce new editions regularly, which exhibit only superficial changes. Sixth, the assumption is accepted by publishers that good materials are sequenced into modules to be covered in a class period. Seventh, the assumption that centralised selection procedures provide efficiency resulting in discounted prices and free materials is fallacious, since publishers add the cost to their products. Concomitant with the development of this system, the reduction of the publishing industry to a small number of large publishing companies has led to the production of national textbooks providing a consensus on content coverage, representation of minority groups, and aesthetic appeal. Tyson-Bernstein and Woodward argued that empowerment of teachers to select materials provides the most promising avenue for reforming this system. Professional associations should support teachers by establishing subject-specific training institutes to empower their judgments

about the quality of materials, developing critical attitudes towards the current system, creating mechanisms for exchanging information about materials, and establishing professional standards for selection committee members. They contended that state-level adoption systems should be dismantled for five main reasons. First, they limit teachers' rights to decide the best materials for their own classrooms. Second, an inherent assumption on which these systems are based, that a small number of bureaucrats removed from classrooms can generate appropriate criteria for the range of students within a state, is open to criticism. Third, it is questionable whether there are sufficient funds and time for these officials to apply criteria to select materials suitable for the range of students in all local school districts. Fourth, it can be disputed whether states could fund the training of teachers to use new approaches embedded in the materials adopted by state-level adoption systems. Fifth, it is unlikely that state-level adoption procedures insulate the selection process from control by commercial and political pressure groups.

3.1.2.2 Reform Movement

3.1.2.2.1 Excellence Debate

National reports on American education, published during the excellence debate, gave prominence to the findings of research studies concerning problems in the ways materials are produced, selected and used. The National Commission on Excellence in Education (1983) found that the quality of textbooks had declined, basing this conclusion on the following research studies and testimony (Tomlinson, 1986). An historical study by Chall et al. (1977) about the quality and difficulty of textbooks and Scholastic Aptitude Test scores provided evidence to substantiate the view that many textbooks are 'written down' to ever-lower reading levels. A two-year longitudinal study by the Educational Products Information Exchange Institute (1980) showed that most students were able to master the subject matter of their textbooks before actually using them. In January 1982, the Association of American Publishers presented testimony to the effect that expenditures on materials had declined by half over the previous seventeen years. Evidence of decline in the substantive quality of textbooks was gathered at public hearings held at Stanford University in March 1982 and at Georgia State University in May 1982.

Other national reports published during the excellence debate also cited problems in the ways materials are produced, selected and used. From a Study of Schooling, an eight-year project conducted in a representative sample of 38 schools in thirteen communities from seven states, Goodlad (1983) found that a wide range of materials was used in English language arts and social studies programs. On the other hand, textbooks dominated mathematics, science, foreign languages, and career and vocational education programs. Materials were not used extensively in only the arts and physical education programs.

Cheney (1987) contended that most basal readers contain little literature; most elementary social studies textbooks contain little history, and textbooks for history lack compelling narrative about human aspirations. She argued that the process used by publishers to develop textbooks is delineated with attention given to the roles of curriculum guides, adoption checklists and the avoidance of controversial topics, in determining the content of textbooks. Cheney cited two remedies for this situation; a move away from centralised selection procedures, and assigning textbooks a less prominent role by replacing them with real literature. Bennett (1988a) asserted that as excessive state regulation is a contributing cause for inappropriate practices by textbook adoption committees, there is a need to improve existing textbook selection and adoption procedures. Cheney (1990) described how well-intentioned measures to improve textbooks, such as the use of readability formulas, the fair representation of ethnic minorities and historical events, the avoidance of controversial issues, and the use of selection criteria, have tended to reduce their quality. She indicated how new guidelines implemented in California, and the textbook reviews of the American Textbook Council, have introduced remedies.

The national reports published during the excellence debate recommended various solutions to improve the system for producing, selecting and using materials. The National Commission on Excellence in Education recommended that text development should be improved by three measures. Academic scholars, subject specialists and outstanding teachers should collaborate with publishers to upgrade and update materials. Development of new materials should be targeted at students with special educational needs. New materials should reflect current applications of technology, the best scholarship in each discipline, and research findings on teaching and learning. The selection of materials should be improved by two measures. Materials should be selected on the basis of their presentation of rigorous and challenging subject matter. Publishers should supply data based on the results of field trials to elaborate on their effectiveness. Consumer information services on available resources should be expanded. In criticising the lack of say teachers have in selecting materials and their reliance on textbooks, Boyer (1983) recommended that teachers should use source materials more effectively, and participate in selecting materials. In concluding that materials developed by the projects of the curriculum reform movement were out-of-date, the Education Commission of the States, Task Force on Education for Economic Growth (1983) recommended in its action plan that greater expenditure was needed to produce better textbooks. Furthermore, technological advancements, such as videotapes, should be utilised to augment more traditional media. The National Science Foundation (1983) recommended establishing a Mathematics, Science and Technology Curriculum Council, consisting of four committees responsible for the elementary and secondary levels in these disciplines, to evaluate available materials, and disseminate information about them. Bennett (1986) recommended

that state and local policy-makers, teachers and parents should set guidelines for textbook publishers. Cheney (1987) recommended that textbooks should be more substantive by placing high value on reading materials containing good literature, history textbooks presenting events of the past in significant terms, and the use of original documents in the classroom. Bennett (1988a) suggested that teachers should become more involved in the decision-making process for selecting materials. Cheney (1990) recommended that the selection of materials should involve using reviews done by scholars and teachers, rather than applying selection criteria mechanically, and alternatives to textbooks should be used.

3.1.2.2.2 Initiatives for Reform

The excellence debate, which prompted policy-makers to realise that materials form an important element in any attempt to improve the quality of education, led to a series of national initiatives. As part of Florida's Raising Achievement in Secondary Education Act passed in June 1983, Governor Robert Graham and the Florida Senate Education Committee hosted 140 publishers, editors, state textbook administrators, and leaders of national professional associations at the Interstate Consortium on Instructional Materials in March 1984. After rejecting a motion from California to form a consortium to promote more challenging materials, the delegates gave the Council of Chief State School Officers (CCSSO) and the National Association of State Boards of Education (NASBE) the responsibility for establishing an agenda for future discussions on reforming materials. In April 1984, representatives from CCSSO, NASBE and the Association of American Publishers agreed on a three-step plan to improve the quality of materials. This plan involved examining current state and local selection criteria, developing model guidelines for the selection process, and assisting states to adapt their existing guidelines to the proposed models. In June 1985, CCSSO and NASBE co-sponsored a second meeting, called Textbook Reform: A Cooperative Agenda, in the Library of Congress at Washington, DC, with the aim of forming a coalition of states to determine the criteria which should be met by materials of good quality. Although a coalition of states was not formed, CCSSO and NASBE co-sponsored a third meeting in September 1985. Maxwell (1985) reported that the same participants expressed a deeper perception at this meeting about the complexity of problems associated with the production, selection and use of materials, but found considerable difficulty in determining solutions.

In a speech to the American Association of School Administrators presented at Las Vegas, Nevada, in February 1984, Secretary of Education, Terrel Bell, suggested establishing several, large-scale regional centres to evaluate textbooks. Following an invitation from Secretary Bell in March 1984, the United States Department of Education funded CCSSO and NASBE to conduct a textbook improvement project, intended to inform state policy-makers about issues concerning quality in textbooks, and to encourage action from the

states to change the prevailing system. In July 1984, Secretary Bell called together a group of 35 textbook publishers, members of state and local boards of education, chief state school officers, and teacher representatives to set an agenda for improving materials by changing the system of production, selection and use.

Released at the annual convention of the Education Writers Association in April 1988, the report of the textbook improvement project became the most influential critique during the excellence debate on the prospect for reforming the existing system. The report's author, Tyson-Bernstein (1988a) argued that prevailing policies and procedures are based on outmoded models. They are subject to the influences of special interest groups concerning controversial issues, and educators concerning increasing the coverage of topics to meet higher standards. These influences have led to excessive coverage of factual information, and lack of discernible themes in textbooks. Reform of textbook content represents one of the least expensive ways of improving American education, since relative expenditure on textbooks is small. On the other hand, the content of textbooks has assumed the force of a *de facto* curriculum, although few of today's textbooks meet the criteria of high quality. The findings of research studies about textbooks have shown a shift in emphasis from identifying biases to determining patterns of text comprehension. This research identified that the text in basal readers is often choppy, stilted, monotonous, and phrases, vital for inferring meaning, are often edited. Although these textual changes occur through editorial policies practised in publishing houses, the responsibility for these faults lies with educators who apply readability formulas uncritically. The use of readability formulas to match the reading difficulty of a text to a grade level has led to the reduction of vocabulary and sentence structure, so that meaning and style are changed, producing text that may be more difficult to read. The emphasis on standardised testing of basic skills has led publishers to incorporate skills into the text at the expense of subject content. The practice of presenting text that passes from fact-to-fact, statement-to-statement, and topic-to-topic, without giving the reader the context to understand the information, represents another pervasive fault in textbook writing. This problem is attributable to the use of detailed review specifications by committees in state-level adoption states, and special interest groups lobbying policy-makers to include or exclude particular topics.

In the second part of the report, Tyson-Bernstein presented a fictional account, caricaturing the process of developing, selecting and adopting textbooks, which is introduced by considering five factors encouraging unsound practices. First, a publisher needs to be able to succeed in listing the textbook on the adoption lists of state-level adoption states, especially California and Texas, to achieve large sales. Second, a publisher needs to stagger production of a new textbook to coincide with the adoption cycles of large state-level adoption states. Third, a publisher needs to publish a new edition of a textbook regularly

by citing a recent publication date in order to satisfy selection committees. Fourth, a publisher needs to satisfy the requirements of a wide range of special interest groups, so that a textbook may be sold in a wide variety of markets. Fifth, a publisher needs to produce a package of free products, to accompany the textbook, so as to entice potential customers.

The third part discussed specific reforms that should occur, if the selection process is to be improved. These are presented as sets of recommendations directed to six groups. Policy-makers in state-level adoption states should modify eleven practices. First, cease detailing bid specifications for publishers. Second, abandon the use of readability formulas as an adoption criterion. Third, stop demanding recent publication dates. Fourth, select committee members on the basis of their talents, rather than their match to demographic characteristics. Fifth, provide training for committee members. Sixth, remunerate committee members. Seventh, abandon using generic checklists. Eighth, develop their own text if specific contexts are to be met. Ninth, devise sanctions to prevent publishers from offering free products. Tenth, establish a policy for selecting materials on the basis of qualities that are known to benefit students. Eleventh, allocate funds for purchasing textbooks at the local level. National subject associations should define coherent curricula, discourage academics and teachers from accepting royalties for texts they have not written, and develop model contracts for authors, which include the right to control subsequent editions. Foundations should support efforts to develop techniques for assessing the effectiveness of textbooks, advocate independent reviews of textbooks, encourage the establishment of a centre for studying textbooks, and support efforts to develop better textbooks. School districts in local-level adoption states should redesign their selection policies, so that negative practices used in state-level adoption states are not reinforced. They should develop new subject-specific criteria, appoint selection committee members on the basis of merit and provide them with training, time and remuneration, encourage small publishers to submit their products, and devise sanctions to prevent employees accepting free products. Teacher unions should organise content-specific textbook study groups, promote alternative means to formulas for judging readability, and support greater control of the selection process by teachers. Publishers should employ scholars with true subject expertise to review the content of textbooks, hire authors who have demonstrated abilities to write engaging text, place greater emphasis on the writing of good text, and be more realistic about the length of time required to produce texts of high quality.

In the fourth part, Tyson-Bernstein conceptualised a model representing an ideal process for selecting materials at the local level, consisting of a sequence of thirteen steps. First, the process should begin with a review of the curriculum and pedagogy involving all participants. Second, selection committee members should be chosen on the basis of their

knowledge, rather than their role or affiliation, and led by a facilitator in a discussion of the major issues in the curriculum. Third, sufficient time and funds should be allocated to accomplish the process. Fourth, the committee's chairperson should develop a schedule outlining the process. Fifth, committee members should share their perceptions with colleagues, who do not serve on the committee. Sixth, the committee should establish a new curriculum that reconciles state or local curriculum frameworks and the committee's view. Seventh, the committee should develop criteria for both initial and final selections of materials, taking into account seven guidelines. Matching the curriculum to a material by computer-based key word searches will ignore important aspects of quality. Context and underlying principles may be more important than events and facts for developing student understanding. Greater weight should be given to academic integrity than ease of use. A rating sheet with too many items may not provide focus. Time is required for committee members to develop a common approach. The selection process should involve division of labour to maximise the use of expertise and time. Committee members should trial materials with students. Eighth, publishers' representatives should be given the opportunity to participate in controlled hearings. Ninth, the committee should determine a procedure for applying the final selection criteria to evaluate submitted materials. Tenth, members of the local community should be involved in reading the materials. Eleventh, the committee should vote on adoption of particular materials, although the district superintendent or local school board should be able to veto the committee's decision, but not initiate their own selection procedures. Twelfth, teachers should be assisted in implementing a newly adopted material through in-service training provided by external facilitators, such as publishers. Thirteenth, the committee chairperson should communicate the strengths and weaknesses of a material to its publisher.

Release of the report was publicised widely in the press (Rothman, 1988; Norman, 1988). This publicity led Tyson-Bernstein to extend the criticism to institutions of higher education as contributors to the deterioration of quality in textbooks, but also to re-evaluate the significance of the factors determined in the report as causing this problem. Tyson-Bernstein (1988b) contended that the disdain academics hold for writing textbooks as a task lacking in real scholarship, the specialisation of academics towards the production of scholarly research, and the rules of tenure and promotion, which discourage textbook authorship, are fundamental obstacles to reforming the system. She argued that textbooks marketed in higher education are also subjected to similar pressures to extend content coverage through a review process involving two tiers; publishers seek critiques from content experts, professors at major research universities, and potential users, teachers in community colleges and state-supported institutions. The first group generally recommends including omissions, whilst the latter group generally endorses the suggestions of pressure groups.

Supported by a grant from the Lounsberry Foundation, the Institute for Educational Leadership (IEL) distributed copies of the report to chief state school officers, state boards of education, and state textbook adoption committees. With support from the same grant, Tyson-Bernstein participated in several state education policy seminars sponsored by IEL, at which key policy-makers debated the issues presented in the report. Subsequently, IEL asked Tyson-Bernstein to write an occasional paper as a sequel to the report with the intention of examining recent policy changes in selection procedures in three key state-level adoption states. The purpose of the paper was to assist state and local policy-makers understand more fully the complexity of these policies, and their relationship to the broader processes of educational reform. In the occasional paper, Tyson (1990) reported on changes to the state-level adoption policies in North Carolina, Texas and California arising from legislation related to each state's educational reform agenda. In North Carolina, state education officials designed a centralised decision-making process for materials selection, while the state legislature supported an alternative system based on democratic principles. In Texas, the state-level adoption procedure was democratised by allowing teacher majorities to be chosen for membership of selection committees. In California, strategies were built into the state-level adoption procedure to permit two-year, follow-up adoption opportunities. Tyson concluded that the educational reform movement increased confrontation between the advocates of state-level adoption and local responsibility for materials' selection. Although each of the three states retained its state-level adoption procedure, state legislatures required decision-making authority to be devolved to the local level.

In commenting on the impact of the excellence debate on reforming this system, Cody (1990) concluded that federal involvement in its reform was recent, and occurred as part of an effort to improve reading achievement as an element of the reform agenda aimed at maintaining economic competitiveness. Attention given by the National Commission on Excellence in Education to the relationship between reading and materials was based on research commissioned by the National Institute of Education showing that reading difficulties were in part due to the way textbooks are developed. Secretary Bell's strong commitment to increasing rigour in materials, realised through various initiatives, was not continued after 1984 by his successor. Relying on a 'bully pulpit' in the United States Department of Education to bring educational problems to public attention, Secretary William Bennett funded research to support his vision of an ideal school (United States Department of Education, 1986). Cody argued that Secretary Bennett's approach reinforced the position of the 'classicists', those who advocated a return to the values of classical education. In a series of reports, he called for greater academic rigour, firmer school discipline, more teaching of traditional morals and ethics, and greater emphasis on

traditional Western literature and American values (Bennett, 1986; Bennett, 1987; Bennett, 1988b).

3.1.2.3 Standards-Based Reform

Efforts undertaken by the states to implement state standards in the 1990s led policy-makers to examine the role of textbooks in standards-based reform. In the spring of 1997, the National Education Goals Panel (NEGP) formed the Goals 3-4-5 Standards Implementation Advisory Committee to facilitate implementation of state standards. At the same time, NEGP commissioned several experts to provide a series of papers, which were considered by the Goals 3-4-5 Standards Implementation Advisory Committee in July 1997 in drawing up eight sets of recommendations. These recommendations referred to linking standards to goals, professional development to standards, assessments to standards and instruction, textbooks to standards, the use of time to achievement of standards, accountability to standards, encouraging public and parent understanding of standards, and maintaining a commitment to the long-term goals of standards implementation. Commissioned to write the paper on textbooks, Tyson (1997) examined the main factors affecting the materials' marketplace, and the criteria for identifying quality in materials, as well as presenting recommendations to change the dynamics within the marketplace.

The rationale for state-level adoption, still retained in twenty southern, southwestern and western states, has varied over the hundred years it has existed. In the early 1900s, its practice involving the selection of a single text was motivated by corruption at the local level, poverty in rural states, student mobility, and lack of local expertise and resources. In the 1950s, state-level adoption evolved to include adoption of multiple lists, funding for non-adopted and supplementary materials, and waivers to rectify publishers' complaints about restriction of trade and educators appeals for greater choice. The emphasis on accountability in the 1970s reinforced the use of state-level adoption as an effective means for purchasing materials that covered state curricula. Demands for greater liberalisation in state-level adoption and the introduction of state standards in the 1990s led policy-makers to define alignment as the principal criterion, but allow local educators greater flexibility in using non-adopted materials, if they met outcomes for student performance. The three populous state-level adoption states of California, Texas and Florida, which account for a quarter of the market, act as powerful influences on publishers' marketing practices, as well as determining the content of their materials. The conflicting demands for content coverage between these states is also responsible for inconsistent coverage of facts, topics and concepts. The local school districts in the 30 local-level adoption states have little influence on the content of textbooks, because they fail to project any particular set of demands. The work of local selection committees is often fraught with problems arising from lack of time,

inadequate training, and the widespread practice of deals offered by competing publishing companies. Although teachers have little effect on content coverage, they are influential in determining the design of textbooks through pre-publication conferences and pilot studies of new materials. The preference of teachers for encyclopedic coverage of topics, and the heavy dependence of inexperienced practitioners on textbooks, reinforces the status quo prevailing in the marketplace. The sales practices of publishing companies, depending on a growing number of free materials to increase purchases, has led to higher prices and greater concentration within the publishing industry.

Historical changes in the decision-making process involved in selecting materials are also responsible for influencing quality. The need to include minority representation on selection committees in the 1960s led to a more public process involving the use of checklists to assess racial bias, design and readability. The superficial aspects of these criteria have been replaced by judgments about alignment, which are often global rather than precise. The findings of research during the 1970s and early 1980s about various aspects of subject matter content coverage and readability influenced the practices of selection committees, but had little effect on publishers. Whilst the practice of curriculum alignment may be defensible, the methods of correlational analysis, computerised word searches, and untrained selectors used to align materials to curricula aggravate the problem of shallow and encyclopedic coverage of topics.

Although national and state standards have not had a direct impact on publishers, they have used curriculum frameworks derived from standards' documents to develop lessons and activities for materials. Publishers are responding with innovative materials that reflect this development in mathematics and science, especially for the elementary and middle grades. Changes to textbook selection procedures in Texas and Florida, reflecting new state standards, may have a positive influence on raising the quality of materials.

Tyson presented four recommendations to NEGP based on the rationale that the strategies most likely to succeed are those founded on changing buyers' preferences and practices. First, NEGP should articulate the case for a more standards-based curriculum and aligned textbooks, because teachers and parents are not yet convinced. Second, NEGP should fund the development of criteria and training programs for selection committees, which are standards-based, informed by research, and defensible. Third, NEGP should encourage the provision of qualitative evaluations of materials for local school districts. Fourth, NEGP should encourage the cessation of unsound practices for aligning textbooks and other materials to the curriculum.

In response to Tyson's paper, the Goals 3-4-5 Standards Implementation Advisory Committee developed four recommendations, which were presented together with the other sets of recommendations to NEGP in November 1997. First, educators in states and local school districts need in-depth decision-making processes, selection criteria that include alignment with standards, and training in their use. Second, an independent source should provide high quality reviews of materials for schools, which address their overall merit, how well they explain underlying concepts in the subject area, how they balance depth and breadth, and how well they represent the subject area standards. Third, teachers should be provided with training, involving in-depth examination of materials in relation to learning goals, to select materials that will help them meet challenging standards. Fourth, schools and teachers should be allowed flexibility and discretion in selecting, using and developing materials, which, in their professional judgment, will best bring all their students to meet the academic standards of the state and the standards and goals of the local school district. Following adoption of these recommendations at its meeting in February 1998, NEGP sent a letter to all governors and state legislators in May 1998 focusing on state policies, which link professional development to academic standards.

3.2 A Typology of Change in the Materials' Marketplace

3.2.1 Evaluation Model

An issue confronting the study at this point concerned incorporating the concept of change inherent in educational reform within the model of the materials' marketplace proposed by Komoski. Whilst the effect of change on the materials' marketplace is recognised in this model through evaluative feedback, the model does not adequately represent the dynamic process of decision-making occurring between publishing companies, state education agencies, selection committees and learners in determining particular policy choices. It is recognised that the outcomes of such policy choices as they affect the development, selection and use of materials may take many forms. In view of this conclusion, it was imperative to draw upon appropriate areas of educational theory to represent the decision-making process occurring within the materials' marketplace as a consequence of educational reform. Resolving this issue involved selecting an approach to educational evaluation suitable for defining a typology capable of classifying different types of change inherent in various activities applied in the publishing industry and educational systems to improve the match between standards or curricula and the materials needed to support them.

A brief examination of the historical development of decision-oriented evaluation indicates it employs concepts that may be useful for categorising the requirements of decision-

making. The curriculum reform movement in the United States during the 1950s and 1960s led to a need to find new evaluative approaches to assist curriculum developers assess the effectiveness of particular programs. Cronbach (1963) argued that evaluators should reconceptualise program evaluation as a process for collecting and reporting information to guide curriculum development, instead of simply comparing competing programs. In 1965, the Elementary and Secondary Education Act stipulated a requirement for evaluation, which was not often satisfied using existing approaches. Closely associated with Stufflebeam, the Context Input Process Product (CIPP) Model was first conceptualised as part of an evaluation project conducted by the Evaluation Center in the Ohio State University for the Columbus School District in 1966. Early in 1968, the honorary professional fraternity, Phi Delta Kappa, formed a seven-member Study Committee on Evaluation, which formulated the CIPP Model (Stufflebeam et al., 1971). Subsequently, the CIPP Model was applied by a number of research and development agencies and school districts, and formed the main topic of several conferences.

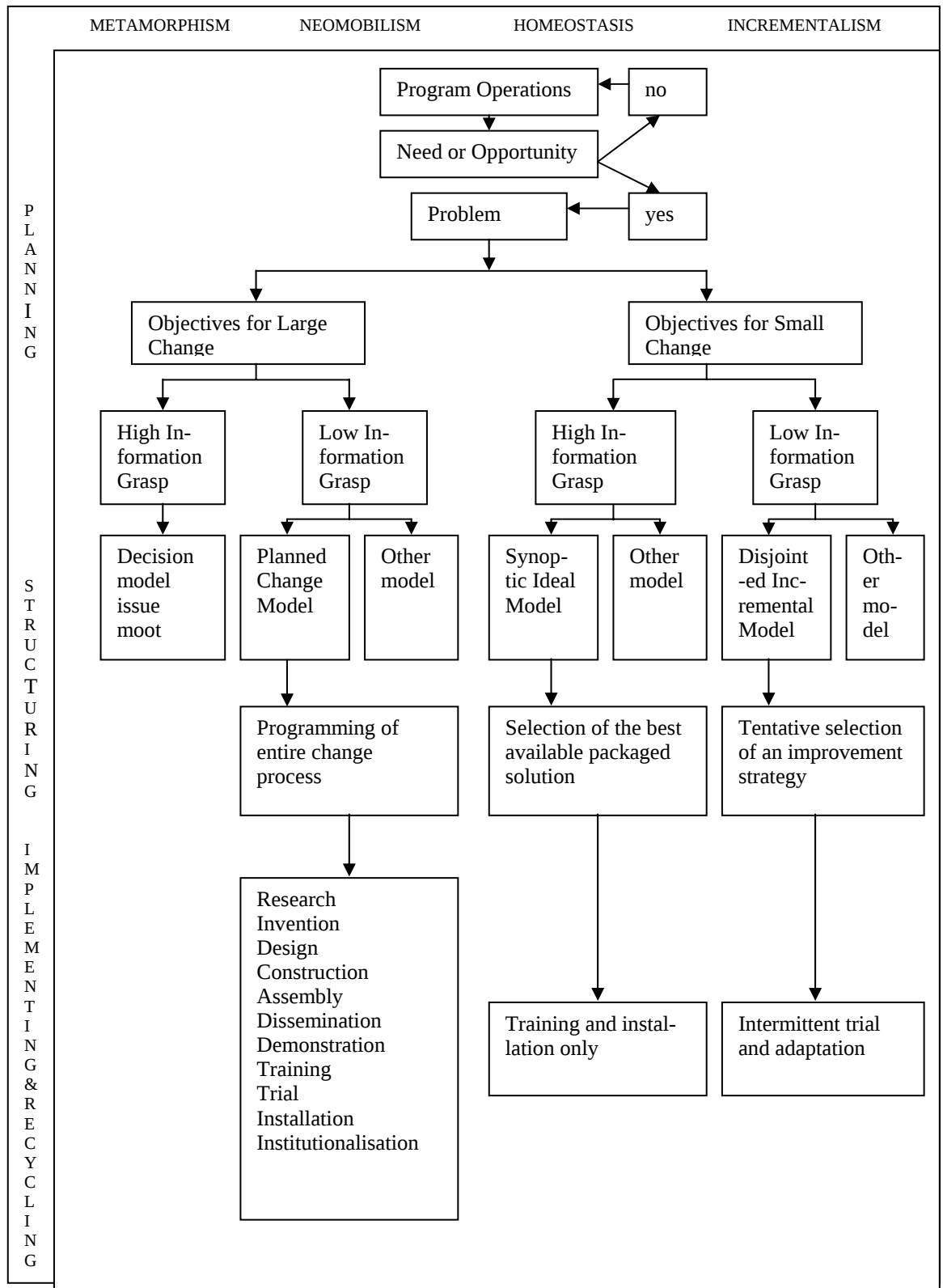
The CIPP Model specifies four stages of evaluation. Context evaluation is conducted to provide a rationale for determining objectives. Input evaluation is conducted to determine how resources are to be used to meet program goals. Process evaluation is conducted to provide feedback to those implementing the program plan. Product evaluation is conducted to provide formative and summative measurements of attainment. If context evaluation indicates that improvement is needed in a program, a decision-making body could choose between alternative types of change depending on the decision setting, a set of environmental circumstances governing both analysis and choice concerning the degree of change and the amount of knowledge or 'information grasp'. In homeostatic decision settings, decisions to make small changes are supported by a high level of information grasp. In incremental decision settings, decisions to make small changes are supported by a low level of information grasp. In neomobilistic decision settings, decisions to make large changes are supported by a low level of information grasp. In metamorphic decision settings, decisions to accomplish complete change are supported by a high level of information grasp. Stufflebeam et al. recognised that homeostatic decision settings are most prevalent in educational contexts, incremental decision settings are characteristic of many educational activities labelled 'innovative', neomobilistic decision settings are characterised by endeavours of high risk, whilst metamorphic decision settings are utopian and essentially theoretical. Selection of the decision setting determines the choice of the appropriate decision model. Homeostatic decision settings employ the synoptic ideal model, characterised by specification of all possible consequences for all possible alternatives in terms of all relevant criteria. Incremental decision settings employ the disjointed incremental model, characterised by continuous exploration of the existing program in order to improve it. Neomobilistic decision settings employ the planned

change model, based on a taxonomy, which classifies the activities of the change process. These evaluation designs require all educational decision possibilities to be categorised. This is achieved by classifying all decisions, initially, as either ends or means of a function, and then according to their relevance to intentions or actualities. This model is conceptualised as four types of decisions. Planning decisions, intended to determine objectives, are serviced by context evaluation. Structuring decisions, applied to design procedures, are serviced by input evaluation. Implementing decisions, intended to utilise, control and refine procedures, are serviced by process evaluation. Recycling decisions, used to judge and react to attainments, are serviced by product evaluation. The interrelationships among the four decision settings, three decision models and four decision types of the CIPP Model are represented as a flow chart of decision-making in Figure 2.

The CIPP Model is not employed in this project for the purpose of educational evaluation. Instead, it is used to classify different types of change inherent in various activities intended to improve the match between standards or curricula and the materials needed to support

FIGURE 2

A FLOW CHART OF DECISION MAKING (after Stufflebeam et al., 1971)



them. Each activity of this type was examined to determine whether it met the conditions for homeostatic, incremental or neomobilistic change defined below. Homeostatic change involves the application of technical standards and quality control data collection systems to make small changes intended to restore the normal balance in an educational system. Incremental change involves the expert judgments and structured inquiry provided by committees and special studies to make small adjustments through trial and correction intended to develop a new balance in an educational system. Neomobilistic change involves heuristic investigations in the early stages followed by a rigorous effort to engineer large change intended to provide innovative activity for inventing, testing and diffusing new solutions to significant problems.

3.2.2 Criteria for Judging Change

In applying these concepts to define change inherent in the effects of standards-based or curriculum reforms on the materials' marketplace, criteria to assess the outcomes consistently across publishing companies, as well as national and state educational systems in the three countries, are specified in the remainder of this chapter. The typology devised by Stake (1967) was applied to organise antecedent, transaction and outcome data within the model.

3.2.2.1 Antecedents

The issue of specifying baseline data about the development, selection and use of materials in the system is important in determining the impact of standards-based or curriculum reforms on these activities. Although observations about antecedent conditions focus on the different ways materials were developed, selected and used in the system, such observations should also aim at determining the consistency between the three components. Comparisons made between the baseline data and observations taken after standards-based or curriculum reforms have affected the system will provide a measure of the impact of change on the ways materials are developed, selected and used.

3.2.2.1.1 Development

Issue: What factors affected the products of the developmental process within the publishing industry before the advent of standards-based or curriculum reforms?

The issue of examining the factors affecting the products of the developmental process within the publishing industry before the advent of standards-based or curriculum reforms is important in providing baseline data for comparison with observations obtained after these reforms have affected their quality. Baseline data about the factors affecting the products before the advent of standards-based or curriculum reforms have been reported in Chapter 2.

3.2.2.1.2 Selection

Issue: What factors affected the selection of materials before the advent of standards-based or curriculum reforms?

The issue of examining the factors affecting the selection of materials before the advent of standards-based or curriculum reforms is important in providing baseline data for comparison with observations obtained after these reforms have affected the selection process. Baseline data about the factors affecting the selection of materials before the advent of standards-based or curriculum reforms have been reported in Chapter 2.

3.2.2.1.3 Use and Curriculum Role

Issue: What factors affected the use and role of materials before the advent of standards-based or curriculum reforms?

The issue of examining the factors affecting the use and role of materials before the advent of standards-based or curriculum reforms is important in providing baseline data for comparison with observations obtained after these reforms have affected their use and role. Baseline data about the factors affecting the use and role of materials before the advent of standards-based or curriculum reforms have been reported in Chapter 2.

3.2.2.2 Transactions

An essential step in determining the impact that standards-based or curriculum reforms may be having on this system is the issue of identifying the transactions occurring in the materials' marketplace. Although observations about transactions focus on changes to the different ways materials are developed, selected and used in the system, such observations should also aim at determining the consistency between their development, selection and use. This task is compounded by the fact that economic forces govern the activities of publishing companies in developing materials. On the other hand, the selection and use of materials occur within educational systems in which economic forces play little part.

3.2.2.2.1 Development

Issue: What factors affected the new products of publishing industry after the advent of standards-based or curriculum reforms?

The issue of examining the factors affecting the publishing industry after the advent of standards-based or curriculum reforms is important in ascertaining whether new products are meeting the needs of these reforms. By examining the attributes of new products developed by the publishing industry, evidence about decision settings can be identified.

Data about the factors affecting new products after the advent of standards-based or curriculum reforms have been reported in Chapter 4.

Making a judgment about the effect of standards-based or curriculum reforms on the publishing industry involve three steps. First, it is necessary to identify whether a change has occurred in the new products. If there is clear evidence that such change has occurred, it is necessary to categorise the characteristics of this change in terms of the three settings defined in the CIPP Model. Theoretically, such evidence may take many forms. Particular characteristics, however, are only likely to take one form at each decision setting. As homeostatic decision settings involve small change supported by high information grasp aimed at restoring the balance between new products and standards or curriculum, homeostatic change may take the form of continued development of traditional materials. As incremental decision settings involve small change supported by low information grasp aimed at continuous improvement in the relationship between new products and standards or curriculum, incremental change may take the form of developing innovative materials. As neomobilistic decision settings involve large change supported by low information grasp aimed at inventing, testing and diffusing solutions to problems in the relationship between new products and standards or curriculum, neomobilistic change may take the form of incorporating new technologies into materials.

3.2.2.2.2 Selection

Issue: What factors affected decision-making in the selection of materials after the advent of standards-based or curriculum reforms?

The issue of determining the nature of decision-making affecting the selection process is important in ascertaining whether the selection of materials is seen as a crucial factor in the process of reform. By examining the strategies employed in selection procedures in response to standards-based or curriculum reforms, evidence about decision settings can be identified. Data about the factors affecting decision-making in the selection of materials after the advent of standards-based or curriculum reforms have been reported in Chapters 5 to 9.

Making a judgment about the effect of standards-based or curriculum reforms on the selection process involve three steps. First, it is necessary to identify whether a change has occurred to the selection procedure. If there is clear evidence that such change has occurred, it is necessary to categorise the characteristics of this change in terms of the three settings defined in the CIPP Model. Although such evidence may take many forms, particular characteristics are only illustrated here for one example at each decision setting. As homeostatic decision settings involve small change supported by high information

grasp aimed at restoring the balance between standards or curriculum and the selection process, homeostatic change may take the form of sequencing curriculum revision and materials adoption cycles. As incremental decision settings involve small change supported by low information grasp aimed at continuous improvement in the relationship between standards or curriculum and the selection process, incremental change may take the form of publishers or selection committees correlating materials to standards. As neomobilistic decision settings involve large change supported by low information grasp aimed at inventing, testing and diffusing solutions to problems in the relationship between standards or curriculum and the selection process, neomobilistic change may take the form of applying information and communication technology to facilitate the selection of materials.

3.2.2.2.3 Use and Curriculum Role

Issue: What factors affected the use and role of adopted materials after the advent of standards-based or curriculum reforms?

The issue of examining the factors affecting the use of adopted materials after the advent of standards-based or curriculum reforms is important in ascertaining whether the role of materials is seen as a crucial factor in the process of reform. By examining the strategies employed in using adopted materials after the advent of standards-based or curriculum reforms, evidence about decision settings can be identified. Data about the factors affecting the use and role of materials after the advent of standards-based or curriculum reforms have been reported in Chapters 5 to 9.

Making a judgment about the effect of standards-based or curriculum reforms on the use of materials involve three steps. First, it is necessary to identify whether a change has occurred to the pattern of use. If there is clear evidence that such change has occurred, it is necessary to categorise the characteristics of this change in terms of the three settings defined in the CIPP Model. Although such evidence may take many forms, particular characteristics are only illustrated here for one example at each decision setting. As homeostatic decision settings involve small change supported by high information grasp aimed at restoring the balance between standards or curriculum and the role of materials, homeostatic change may take the form of recommending the use of particular materials. As incremental decision settings involve small change supported by low information grasp aimed at continuous improvement in the relationship between standards or curriculum and the role of materials, incremental change may take the form of providing evaluative reports on the use of materials in schools. As neomobilistic decision settings involve large change supported by low information grasp aimed at inventing, testing and diffusing solutions to problems in the relationship between standards or curriculum and the role of materials,

neomobilistic change may take the form of providing dissemination centres to facilitate adoption and implementation of materials.

3.2.2.3 Outcomes

The aim in comparing baseline data with observations about transactions occurring in the materials' marketplace is to determine the outcomes regarding the effect of standards-based or curriculum reforms on the development, selection and use of materials. Although conclusions about outcomes focus on changes to the different ways materials are developed, selected and used in the materials' marketplace, such conclusions should also aim at determining the consistency between their development, selection and use.

3.2.2.3.1 Development

Issue: What factors affected the products of the developmental process within the publishing industry after the advent of standards-based or curriculum reforms?

The issue of determining the factors affecting the developmental process within the publishing industry after the advent of standards-based or curriculum reforms is important in ascertaining the degree of improvement in the quality of new products. If the assumption is made that an improvement in the quality of new products reflects an acceptance that the development of materials is viewed as a crucial factor in the process of reform, evidence to support such a judgment needs to be considered.

The outcome of standards-based or curriculum reforms on the development of new materials are reflected in the four criteria outlined below.

1. Is the feasibility of producing the material at a reasonable cost affected by the impact of standards-based or curriculum reforms?

An effect on the need for a material to be made at a reasonable cost must be acknowledged as a consequence of the change for this outcome to be met.

2. Is the marketability of the material affected by the impact of standards-based or curriculum reforms?

An effect on the need for a material to succeed in the marketplace must be recognised as a consequence of the change for this outcome to be met.

3. Is the profitability of the material affected by the impact of standards-based or curriculum reforms?

An effect on the need for a material to make an acceptable profit must be recognised as a consequence of the change for this outcome to be met.

4. *Is the acceptability of the material by selection committees and teachers affected by the impact of standards-based or curriculum reforms?*

An effect on the need for a material to be acceptable to selection committees and teachers must be acknowledged as a consequence of the change for this outcome to be met.

3.2.2.3.2 Selection

Issue: What factors affected the selection of materials after the advent of standards-based or curriculum reforms?

The issue of determining the factors affecting the selection of materials after the advent of standards-based or curriculum reforms is important in ascertaining the effectiveness of the selection process. If the assumption is made that an improvement in the decision-making process reflects an acceptance that the selection of materials is viewed as a crucial factor in the process of reform, evidence to support such a judgment needs to be considered.

The outcome of standards-based or curriculum reforms on the selection of materials are reflected in the four criteria outlined below.

1. *Is the content of materials as a selection criterion affected by the impact of standards-based or curriculum reforms?*

An effect on the philosophy and coverage of the contents in materials must be acknowledged as a consequence of the change for this outcome to be met.

2. *Is the acceptability of materials as a selection criterion affected by the impact of standards-based or curriculum reforms?*

An effect on the depiction of ethnic, racial, religious, gender and other aspects of social fairness in materials must be acknowledged as a consequence of the change for this outcome to be met.

3. *Is the useability of materials as a selection criterion affected by the impact of standards-based or curriculum reforms?*

An effect on the useability of materials by teachers and students must be recognised as a consequence of the change for this outcome to be met.

4. *Is the cost of materials as a selection criterion affected by the impact of standards-based or curriculum reforms?*

An effect on the cost of materials must be recognised as a consequence of the change for this outcome to be met.

3.2.2.3.3 Use and Curriculum Role

Issue: What factors affected the use and role of adopted materials after the advent of standards-based or curriculum reforms?

The issue of determining the factors affecting the use of adopted materials after the advent of standards-based or curriculum reforms is important in ascertaining their role. If the assumption is made that the effective use of adopted materials reflects an acceptance that their role is viewed as a crucial factor in the process of reform, evidence to support such a judgment needs to be considered.

The outcome of standards-based or curriculum reforms on the use of materials are reflected in the four criteria outlined below.

1. *Is content as an attribute of the curriculum role of adopted materials affected by the impact of standards-based or curriculum reforms?*

An effect on the appropriateness, coverage and objectives presented in materials must be recognised as a consequence of the change for this outcome to be met.

2. *Is understandability by students as an attribute of the curriculum role of adopted materials affected by the impact of standards-based or curriculum reforms?*

An effect on the understandability of materials by students must be recognised as a consequence of the change for this outcome to be met.

3. *Is useability by teachers and students as an attribute of the curriculum role of adopted materials affected by the impact of standards-based or curriculum reforms?*

An effect on the useability of materials by teachers and students must be recognised as a consequence of the change for this outcome to be met.

4. *Is likeability by students as an attribute of the curriculum role of adopted materials affected by the impact of standards-based or curriculum reforms?*

An effect on the likeability of materials by students must be recognised as a consequence of the change for this outcome to be met.

3.2.3 A Total Typology

A flow-chart showing the major issues to be resolved in determining the impact of standards-based or curriculum reforms on the materials' marketplace is illustrated in Figure 3. The left matrices represent the flow of issues to be answered concerning the impact of standards-based or curriculum reforms on the products of the publishing industry. The centre matrices represent the flow of issues to be answered concerning the impact of standards-based or curriculum reforms on the selection process in educational systems. The right matrices represent the flow of issues to be answered concerning the impact of standards-based or curriculum reforms on the use and role of adopted materials in educational systems.

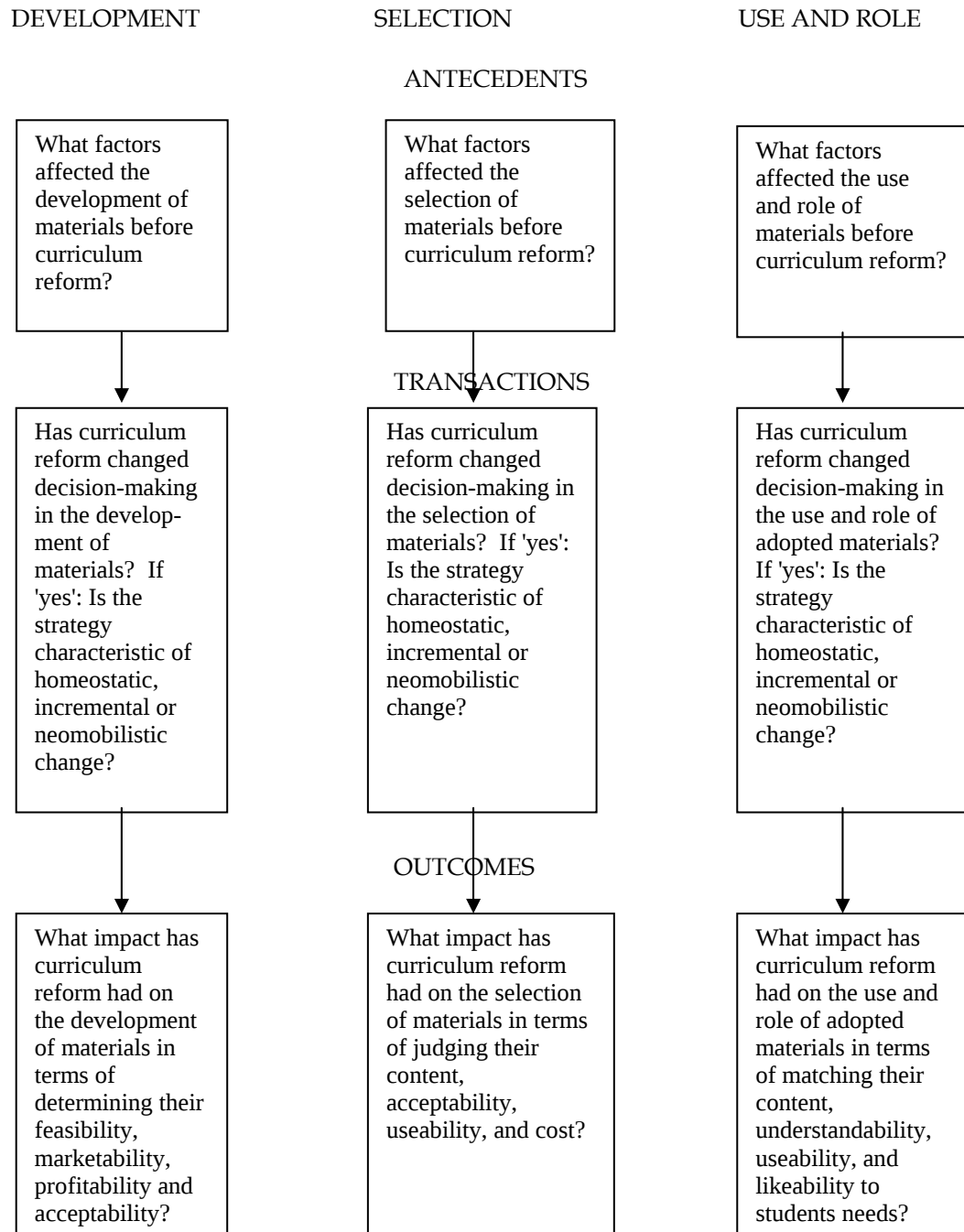
3.3 Conclusion

This flow chart is employed for two purposes. First, the different decision settings, in which change brought about by standards-based or curriculum reforms have occurred, are classified. Second, judgments are made about the outcomes of these changes by taking account of the findings reported in the following chapters. The classification of these observations is reported in the Conclusion.

In reaching these judgments, it is essential to report observations about the effects occurring in the publishing industry and educational systems as antecedent and transaction data. The reporting of these data commences in Chapter 4 by investigating the impact that these reforms are having on the content of new textbooks and other materials produced by the publishing industry by surveying publishers' perceptions about these issues.

FIGURE 3

FLOW CHART SHOWING THE MAJOR ISSUES OF THE IMPACT OF CURRICULUM REFORM ON THE MATERIALS' MARKETPLACE



CHAPTER 4

A STUDY OF THE IMPACT OF CURRICULUM REFORMS ON THE PUBLISHING INDUSTRY

In Chapter 2, the review of research literature about the activities of the publishing industry in the United States showed that our understanding of its workings is at best imperfect. The mystery surrounding the publishing industry in the United States is confirmed by the observation that little, if any, research of substance has been conducted into the publishing industry in either the United Kingdom or Australia. On the other hand, it has been shown in Chapter 1 that international studies of educational achievement have focused the attention of policy-makers on the relationship between textbook content and the curriculum. However, the interest of researchers has not extended, as yet, to investigating the attributes of the publishing industry that influence this relationship.

The purpose of this chapter is to explore this dimension further by reporting a study of publishers' perceptions about the impact of standards-based and curriculum reforms on the new materials they have developed to meet the needs of schools in implementing these reforms. As an introduction, the issues of concern to the publishing industry in each of the three countries are discussed by examining the policies on educational publishing promoted by national associations of publishers.

4.1 Research Problem

4.1.1 Contextual Background

4.1.1.1 Publishers Association

Representing the interests of book, journal and electronic publishers to the British government, the European Commission, foreign governments and other organisations involved in the book trade, the Publishers Association is structured into five divisions, which provide specific expertise and services. The General Books Council serves trade publishers of fiction and non-fiction books, and operates special committees on children's books and religious publishing. The Book Development Council International serves all publishers involved in overseas markets to promote the export of books and journals, and sale of rights. The Council of Academic and Professional Publishers represents the interests of publishers of college, university, academic and professional books and journals. The Electronic Publishers Forum provides a forum for CD-ROM and on-line publishers. The Educational Publishers Council campaigns to increase the level of spending on materials, funds the Books Raise Standards campaign, supports the publication of materials of high

quality appropriate for the National Curriculum, licenses photocopying and electronic copying in schools and colleges, holds exhibitions, and provides an information service.

The Educational Publishers Council supports the annual Education Resources Awards organised by the British Educational Suppliers Association and Highberry Nexus Media, publisher of *Education Resources and Management* magazine. In January, publishers nominate particular materials they have published over the previous year with the support of testimonials from two schools or colleges. An independent panel of expert judges, most of whom are teaching professionals, use a set of criteria to evaluate the nominated materials, and then consider them individually to select a winner and a highly commended entry in each of seven categories. Impact on teaching and learning, quality of teacher support material, relevance to student age range, relevance to national curricula in the United Kingdom, potential for cross-curricular activity, potential for use in structured teaching, and inclusion of reinforcement exercises form the educational criteria. Cost effectiveness is a criterion in terms of the educational objectives and outcomes of the material. The judges also look for evidence of development where a material is a new edition. Winners and highly commended materials within the categories of special education, early years, primary resources and equipment, secondary resources and equipment, primary books, secondary books, and information and communications technology are announced at a gala event at the annual Education Show held in March. Other awards for leadership in teaching, the educational establishment of the year, suppliers of the year, United Kingdom, and outstanding achievement are presented at the same event.

The Educational Publishers Council's campaign to increase the provision of materials in schools led to some successes. Prior to the general election in May 1997, resources were directed towards a national Starved of Books campaign organised by the School Book Alliance, formed by the Educational Publishers Council, the Book Trust and the National Confederation of Parent Teacher Associations to promote the importance of books for children's development, highlight the inadequate provision of materials in schools, and work with the educational community to improve the level of books available. The School Book Alliance commissioned Critical Research to interview a sample of 301 parents based on standard demographic and age groupings across England, Wales and Scotland in January 1997 on their perceptions about the provision of materials. The School Book Alliance (1996) reported that 53 percent of respondents with children attending public schools believed that the provision of materials was inadequate, although the proportion fell to 25 percent of respondents with children attending private schools. It was also found that 75 percent of respondents believed it was important to fund the provision of materials adequately, since 32 percent of respondents stated their children were required to share

materials and 34 percent of respondents stated their children used outdated or damaged materials. Furthermore, 76 percent of respondents purchased books to assist their children with homework. As a consequence, 55 percent of respondents with children attending primary schools and 81 percent of respondents with children attending secondary schools believed that the funds spent on purchasing materials were too low. For these reasons, 67 percent of respondents stated they would vote for a political party, which pledged to increase funding to education. In response, the School Book Alliance produced a parent's action pack outlining strategies, ranging from checking the local school's book provision, launching a letter writing campaign, helping the local school improve the quantity of available materials, to organising a petition to the local member of parliament.

The findings reported by the School Book Alliance were supported by evidence from other research studies. In investigating the pattern of expenditure by schools on materials, the Book Trust (1996) recommended that levels of expenditure necessary to cover the requirements of the National Curriculum adequately be set at 45 pounds sterling per primary student, 56 pounds sterling per student in grades 7 to 11, and 84 pounds sterling per student in grade 12, with an expenditure of 20 percent above these benchmarks necessary to provide good coverage. In response to the second revision of the National Curriculum, the Book Trust surveyed a sample of schools and the main educational publishers, as well as reviewing other research findings, to set new recommendations for schools' expenditure on materials. Finding that schools' estimates of what they needed to spend exceeded publishers' estimates of new book costs by a wide margin, the Book Trust (2002) recommended that students should have access to a relevant book in each subject, schools should use a needs-based model for establishing their budgets using as a guideline 36.50 pounds sterling per primary student and 69.50 pounds sterling per secondary student to cover the requirements of the National Curriculum adequately.

Commissioned by the Educational Publishers Council, the Centre for Successful Schools in Keele University conducted a longitudinal study on the availability and use of materials, and a second study on the impact of textbooks on improving learning. The longitudinal study reported the findings of annual surveys of secondary school students over a six-year period on their perceptions concerning the availability and quality of basal materials in English, Mathematics, Science, Geography, History, and Religious Education (Keele University, 2001; Keele University, 2002; Keele University, 2003). The samples totalled 53,701 pupils enrolled in 269 public secondary schools located in rural, suburban, urban and inner urban settings. The findings showed that the proportion of respondents provided with basal materials during lessons across all subjects rose but then fell from 53.3 percent in 1997-1998, 54.9 percent in 1998-1999, 56.1 percent in 1999-2000, 56.9 percent in 2000-2001, 55.8 percent in 2001-2002, to 54.5 percent in 2002-2003. The availability of

materials over the six-year period varied markedly between different subjects, ranging from 71.8 percent in Mathematics, 58.5 percent in Science, 55.8 percent in History, 53.6 percent in English, 51.7 percent in Geography, and 40.3 percent in Religious Education. Fewer respondents in grade 7 than in grade 11 reported over the six-year period being provided with materials, ranging from 69.9 percent to 73.6 percent in Mathematics, 54.4 percent to 64.6 percent in Science, and 43.4 percent to 73.6 percent in English. Overall, the proportion of respondents reporting that they had access to materials for use at home rose then fell from 32.9 percent in 1997-1998, 31.5 percent in 1998-1999, 37.5 percent in 1999-2000, 36.6 percent in 2000-2001, 34.8 percent in 2001-2002, to 29.3 percent in 2002-2003. The respondents' access to materials for use at home over the six-year period varied markedly between different subjects, ranging from 58.2 percent in Mathematics, 39.5 percent in Science, 36.1 percent in English, 31.1 percent in History, 22.9 percent in Geography, and 14.8 percent in Religious Education. Fewer respondents in grade 7 than in grade 11 reported over the six-year period having access to materials to take home, ranging from 50.3 percent to 74.4 percent in Mathematics, 25.0 percent to 58.6 percent in Science, and 19.4 percent to 66.7 percent in English. Overall, the proportion of respondents finding their textbook helpful rose then fell from 77.7 percent in 1997-1998, 78.7 percent in 1998-1999, 77.7 percent in 1999-2000, 75.7 percent in 2000-2001, 74.8 percent in 2001-2002, to 72.0 percent in 2002-2003. Respondents' satisfaction with their textbook over the six-year period varied between different subjects, ranging from 82.2 percent in Mathematics, 81.3 percent in Science, 77.4 percent in History, 76.4 percent in Geography, 74.1 percent in English, and 65.3 percent in Religious Education. Fewer respondents in grade 7 than in grade 11 reported over the six-year period being satisfied with their textbook, ranging from 78.5 percent to 82.5 percent in Science, and 72.0 percent to 79.2 percent in English. However, this pattern was reversed with fewer respondents in grade 11 than in grade 7 being satisfied with their textbook in Mathematics ranging from 80.8 percent to 82.3 percent. Overall, the proportion of respondents relying on their parents to buy materials for use at school rose from 18.8 percent in 1997-1998, 17.9 percent in 1998-1999, 20.0 percent in 1999-2000, 20.2 percent in 2000-2001, 21.2 percent in 2001-2002, to 24.2 percent in 2002-2003. Such reliance varied markedly between subjects, increasing over the six-year period from 23.3 percent to 29.0 percent in Mathematics, 21.1 percent to 32.0 percent in Science, and 20.0 percent to 26.0 percent in English. Fewer respondents in grade 7 than in grade 11 reported over the six-year period that their parents bought materials, ranging from 15.3 percent to 47.1 percent in Science, 14.9 percent to 46.8 percent in Mathematics, and 14.4 percent to 31.8 percent in English. Overall, the proportion of respondents reporting that their school libraries were adequate in satisfying their needs for books rose then fell from 76.5 percent in 1997-1998, 77.6 percent in 1998-1999, 77.9 percent in 1999-2000, 73.8 percent in 2000-2001, 74.2 percent in 2001-2002, to 73.5 percent in 2002-2003. However, student satisfaction varied between subjects ranging from 84.9 percent for History, 81.9 percent for Geography,

81.3 percent for Science, 75.7 percent for Religious Education, 75.4 percent for English, to 54.5 percent for Mathematics. Fewer respondents in grade 11 than in grade 7 reported over the six-year period that their school libraries were adequate in satisfying their needs for books, ranging from 75.8 percent to 85.1 percent in Science, 68.8 percent to 80.9 percent in English, and 50.6 percent to 60.4 percent in Mathematics. In summary, the longitudinal study showed over the six-year period an initial trend towards increasing availability and improving quality in materials across all indicators except for parents' obligation to buy materials, but this trend had reversed markedly across all indicators over the last two years of the study.

In the second study, Keele University (1999) reported the findings of a survey of secondary school students on their perceptions about using materials, the allocation of funds to purchase materials and the ways materials are used to support learning in English, Mathematics, Science, Geography, History, and Modern Languages. The sample consisted of 2,800 pupils in grade 8, 10 and 12, 475 parents, 120 subject coordinators and 21 principals from a stratified random sample of 28 public schools in England and Wales. The student respondents reported that the availability of materials varied markedly between foundation subjects, ranging from 79 percent in Mathematics, 76 percent in Modern Languages, 63 percent in Science, 56 percent in English, 49 percent in History, and 47 percent in Geography. In each case, the availability of materials increased from the lowest grade to the highest grade, except for Mathematics and Modern Languages, where availability was greatest in grade 10. The marked difference in the availability of materials correlated with their degree of use, ranging from 65 percent of respondents reporting materials were always used in Mathematics, 54 percent in Modern Languages, 30 percent in History, 26 percent in Geography, 22 percent in Science, and seven percent in English. Similarly, the respondents reported that their access to materials for use at home varied markedly between foundation subjects, ranging from 75 percent in Mathematics, 65 percent in Modern Languages, 49 percent in Science, 32 percent in English, 29 percent in History, and 24 percent in Geography. The respondents believed that school libraries held sufficient books for all foundation subjects, except Mathematics and Modern Languages. Approximately 30 percent of the respondents reported that their parents were obliged to buy materials, with the greatest needs being in Modern Languages and Science. The students' views were supported by the parents' views, as 42 percent believed their children's school did not provide sufficient materials, whilst 49 percent believed funding for materials was inadequate. The parents also reported that the frequency their children brought home books in the foundation subjects varied, ranging from 70 percent in Mathematics, 50 percent in Modern Languages, 44 percent in Science, 28 percent in English, 22 percent in History, and 20 percent in Geography. Although 69 percent of the parents believed they should not be expected to buy materials, 43 percent had needed to buy them

to support their children's learning. Only a quarter of the subject coordinators reported that the funding they received for purchasing materials was generous, although a further 55 percent reported that funding was adequate. Although almost all schools lacked a policy for funding materials, 38 percent of the subject coordinators reported that funds were allocated through bidding systems, 31 percent by historic precedents, 23 percent by agreed formulas and eight percent by class time. Although subject coordinators gave high priority to providing materials for lessons, only 54 percent gave the same priority to providing materials for homework. Instead of relying on commercially available materials, 32 percent reported that more than half of the materials used were worksheets and photocopies. Only 19 percent of the school principals reported that funding for purchasing materials was generous, although a further 47 percent reported funding was adequate. The findings of the study indicated that there was a considerable degree of agreement between these groups concerning the provision of basal materials. Whereas insufficient funding was identified as an important reason for lack of provision, other issues relating to teaching approaches, school organisation, the perceived relevance of particular materials, and the impact of information and communication technology also affected the provision of materials.

From its own research through annual school book buying surveys, the Educational Publishers Council reported on the basis of responses received from large samples of schools that they spent substantially less than the recommended levels of expenditure on materials. Marked differences in expenditure were found between countries, and schools funded by local education authorities, grant-funded and independent schools. Watson (2000) found that there was a significant statistical relationship between higher spending on materials and better than average academic results. This analysis was based on data obtained from 1,072 schools responding to the School Book Buying Survey for 1998-1999, and the Department for Education and Employment's data on student performances in the key stage 2 tests and the General Certificate for Secondary Education.

Changes occurring in the marketplace due to the greater uniformity being brought about by the National Curriculum, led the Educational Publishers Council to commission the Institute of Education in the University of London to document research literature on textbooks. On the basis of searches of the catalogue of the Institute of Education's library, the databases of the Educational Resources Information Center, the British Education Index, the Canadian Education Index, the Australian Education Index, and the Council of Europe's European Documentation and Information System for Education, together with contacts made with teachers' centres in all local education authorities and professional associations in the United Kingdom, and organisations in foreign countries involved in research on textbooks, Wood and Lambert (1998) produced a research review and

bibliography covering studies on textbooks. The research review and bibliography provided information covering two facets. International perspectives on research, funding of textbooks and school effectiveness presented research on the provision of textbooks. The use of textbooks, user studies, textbooks and teaching methods, distance learning, critical thinking, school effectiveness, further education, selection and evaluation presented research on textbooks and school effectiveness.

Late in 1996, the Educational Publishers Council lobbied David Blunkett, the Labour spokesperson on education, at a meeting of publishers, which led to a commitment on the part of the Labour Party to attend to shortages of materials in schools. Subsequently, every member elected to parliament in May 1997 received a statement of the Labour Party's policy on the provision of educational materials. This commitment was reinforced by the new Labour government's announcement of the National Literacy Strategy, including additional funding for book purchases to be implemented through a National Year of Reading commencing in September 1998. As a consequence, the Educational Publishers Council designed and distributed three brochures, which outlined its role in the National Literacy Strategy, presented benchmarks for adequate funding of materials, and provided a book check assessor for educators to assess the adequacy of a school's expenditure on materials. In 1999, the Educational Publishers Council extended its campaign to increase funding for secondary schools to purchase materials in relation to the revised National Curriculum, the introduction of the National Numeracy Strategy, new courses in citizenship and preparation for adult life, new examinations, and qualifications for 16- to 19-year-olds.

4.1.1.2 Association of American Publishers

The Association of American Publishers' mission is directed to fulfilling a number of core activities: intellectual property; new technology and communications issues of concern to publishers; First Amendment rights, censorship and libel; international freedom to publish; funding for education and libraries; postal rates and regulations; and tax and trade policies. Along with membership services, government affairs, a statistical program, public information and press relations, divisions and committees direct these activities. Core committees cover the compensation survey, diversity, educational programs, freedom to read, the Get Caught Reading campaign, postal services, publishing Latino voices, small and independent publishers, statistics, trade libraries, and trade publishers. Core copyright committees cover legal issues, copyright education, international copyright protection, and rights and permission. Core international committees cover English as a second language, executive issues, freedom to publish, and rights and sales. Core technology committees cover digital content, the digital object identifier system, enabling technologies, and on-line information exchange. Higher education committees cover materials for higher education,

and executive issues. Professional and Scholarly Publishing Division committees cover electronic information, journals, and marketing.

The School Division works to enhance the role of materials, increase funding for materials, and form a bridge between publishers, the educational community and the public. It monitors current legislation on educational matters and informs publishers of changes, and maintains a network of legislative advocates, who work with policy-makers and school officials. The School Division convenes a number of committees to accomplish these aims. The Contract Coordinator Committee works with the National Association of State Textbook Administrators towards developing a standardised bid form to replace the varying formats currently used in the state-level adoption states. Focusing on identifying and recommending strategies to deal with critical public policy issues relating to the publication of materials, the Critical Issues Committee launched an accuracy e-line on the Association of American Publishers' web site in 2000 for the public to report errors in materials. The Depository Task Force Committee convenes to discuss issues pertaining to state textbook depositories. The Early Education Committee identifies and deals with challenges and opportunities for early childhood education. The Lawyers Committee discusses legal issues relevant to educational publishing and distribution. State committees in California, Florida and Texas focus on adoption and distribution of materials within their regions, together with legislative matters relating to educational publishing. The Committee on Serving Students with Disabilities facilitates the production of suitable learning resources for students with visual disabilities. The Supplemental Publishers Committee identifies public policy issues relating to publishers of supplemental materials. The Technologies Committee identifies and deals with the challenges and opportunities created by new technologies for delivering materials, such as the Internet, e-books, and customised publishing. The Test Committee, composed of educational test publishers, discusses current issues regarding assessment tools for the school test publishing industry. The Textbooks Specifications Committee serves as the Association of American Publishers' branch of the Advisory Commission on Textbook Specifications, which reviews and updates the reference guide, *Manufacturing Standards and Specifications for Textbooks*.

The Association of American Publishers reported findings from several research studies on the availability of materials. In March 1997, the Association of American Publishers and New York State United Teachers contracted the market research firm, Penn, Schoen and Berland Associates, to conduct a telephone survey of a random sample of 525 New York public school teachers on their perceptions about the availability and use of textbooks. The Association of American Publishers (1997) reported that the respondents found shortcomings in five areas. The need to borrow textbooks from their colleagues was cited by 35 percent of the respondents. The inability to assign homework, because students

could not take textbooks home, was reported by 24 percent of the respondents. Disruption to classes, because students had to share books, was reported by 21 percent of the respondents. The need to purchase books with their own funds was reported by 56 percent of the respondents. The newest textbooks were cited by 20 percent of the respondents to be more than five years old. Joined by state politicians at the release of the report of the survey in June 1997, the Association of American Publishers was able to influence Governor George Pataki to increase funding for the purchase of new materials for schools across New York.

In April 1998, the Association of American Publishers commissioned the political consultancy firm, Dresner, Wickers and Associates, to survey a random sample of 800 citizens across California on their perceptions about state funding for textbooks. A majority among the respondents rated the need to provide students with current textbooks as the most important, ongoing, spending priority among a list of state educational improvements. A quarter or more of all Californian students were perceived by 53 percent of the respondents to share textbooks or had none available. Students were perceived by 60 percent of the respondents to have no textbooks to take home. A quarter or more of all Californian teachers were perceived by 71 percent of the respondents to use out-of-date textbooks. With the introduction of new state standards in California, 76 percent of the respondents favoured legislation providing additional funds for purchasing materials aligned to the standards.

In 2002, the Association of American Publishers and the National Education Association contracted the market research firm, Mathew Greenwald and Associates, to survey a nationwide random sample of 1,000 National Education Association members on their use of textbooks and other materials. Using a questionnaire designed by the National Education Association, Mathew Greenwald and Associates conducted a telephone survey in May and June of 2002. The National Education Association (2002) reported that 46 percent of the respondents taught in elementary schools, 20 percent taught in middle schools, and 26 percent taught in high schools. Thirty-two percent of the respondents' schools were located in suburban areas, 24 percent in urban areas, 24 percent in small towns, and 20 percent in rural areas. The average number of years of teaching experience for the respondents was 16.2. Forty-seven percent of the respondents used textbooks, 32 percent used handouts, 30 percent used manipulatives, 21 percent used workbooks, 14 percent used CD-ROMs, nine percent used audio recordings, four percent used source materials, and one percent used visual presentations on a daily basis. The use of particular media varied by grade level with 51 percent of high school teachers and 50 percent of elementary teachers using textbooks daily, although elementary teachers used handouts, manipulatives and workbooks more frequently than their counterparts. Manipulatives

were rated as effective materials by 67 percent of respondents, whilst other media were rated as effective by from 24 to 40 percent of the respondents. However, less frequently used media were rated to be just as effective as media used more frequently. Respondents, who did not use textbooks, were more likely to use a range of media. Overall, 78 percent of the respondents used textbooks with the proportion increasing with grade level. Textbooks were used for various purposes with 95 percent of the respondents using them as a reference tool, 91 percent as a supplement for planning lessons, 89 percent as a guide for lessons, 80 percent for classroom discussion, and 64 percent for homework assignments. The teachers' role in selecting textbooks was rated as important by 88 percent of the respondents, and training in using textbooks as important by 87 percent. Availability of a textbook for every student in the classroom was rated as important by 84 percent of the respondents. Availability of a textbook for every student to take home was rated as important by 84 percent of the respondents. Replacement of textbooks every five years was rated as important by 68 percent of the respondents. Overall, respondents who used textbooks reported that their students used them for 44 percent of class time, and 37 percent of homework assignments. However, 16 percent of respondents did not have enough textbooks for students to take home. Respondents who taught in urban areas, in less technologically advanced schools, students of lower socioeconomic backgrounds, and minority students were more likely to report inadequate provision of textbooks. As a consequence, 61 percent of the respondents who used textbooks reported using their own funds to purchase materials, and 28 percent reported borrowing materials from other teachers. Furthermore, higher proportions of teachers who taught minority students, or worked in schools in urban areas reported purchasing or borrowing materials. Whilst 84 percent of the respondents who used textbooks rated them as providing current information, 32 percent reported that the oldest textbook used was ten years or older. Outdated information in textbooks led to 33 percent of these respondents reporting student loss of interest, 28 percent reporting student exposure to incorrect information, and 27 percent reporting that students felt the text was of no value. On the other hand, 79 percent of the respondents who used textbooks rated them as excellent or good in their coverage of state standards. Although no common entity was identified as responsible for selecting textbooks, 28 percent of the respondents reported being primarily involved in choosing the textbooks they used.

4.1.1.3 Australian Publishers Association

In 1948, the New South Wales Publishers Association and the Victorian Publishers Association merged to form the Australian Book Publishers Association, a national association consisting of 20 members involved in publishing in Australia. Changing its name in 1996, the Australian Publishers Association grew over the intervening period to 116 members, representing companies producing about 80 percent of the annual turnover

in the Australian publishing industry. The Australian Publishers Association contributes to the development of publishing, protects and encourages the interests of copyright owners, agents and businesses, represents members' interests, encourages excellence in publications, protects freedom of expression, promotes members' publications through an annually held Australian Book Fair, and offers training for publishers. In order to accomplish this mission, the Australian Publishers Association convenes four sectional and five core committees. The sectional committees cover trade publishers, educational publishing, tertiary and professional publishing and small publishers. The core committees cover training, export, children's publishing, copyright, and standards.

The Schools Educational Publishing Committee liaises with Commonwealth, state and territory education agencies, universities and subject associations on matters relating to curriculum development, funding, copyright protection, statistics, and the role of publishing in education. Since 1994, the Schools Educational Publishing Committee has coordinated the annual Awards for Excellence in Educational Publishing conducted by the Teaching Resources and Textbook Research Unit in the Faculty of Education at the University of Sydney. A judging panel, consisting of members with expertise in primary, secondary and higher education as well as publishing, evaluates the materials submitted for the awards. Initially, a subcommittee of the judging panel screens all submitted materials by applying criteria on clarity of writing, pedagogical implications, quality of illustrations, representation of the discipline, special features and characteristics, quality of the subject matter content, innovation and flair. From the initial screening, the most meritorious materials are examined by the full panel, which judges them as winners or shortlisted publications within the categories of single book, series, teaching and learning package, and teacher reference across four levels: primary; secondary; technical and further education and vocational; and tertiary. Since 1999, the Awards for Excellence in Educational Publishing have included a technology showcase for the primary and secondary levels, and since 2000 an Australian educational web site category awarded across the four levels. A booklet, published for the Australian Publishers Association by the national newspaper *The Australian*, listing the winners and shortlisted publications, is disseminated to schools across Australia.

In 1987, the Australian Book Publishers Association sponsored the Textbooks in Secondary Schools Project to ascertain the situation regarding the funding, selection, and use of textbooks in New South Wales' public secondary schools. Commissioned to undertake the project, the Teaching Resources and Textbook Research Unit conducted two studies. In the first, Laws (1988) found from a sample of 28 schools that funding provided by the government to purchase textbooks was inadequate, selection procedures varied widely, and teachers used textbooks widely in all core subjects. In the second, Laws et al. (1990)

reported from a sample of 20 schools that teachers' use of materials varied across subjects from 80 percent of class time in mathematics, 60 percent in English, 50 percent in science, with variable use between teachers in social studies and history. Using these findings as a basis for further research, the Schools Educational Publishing Committee surveyed all schools in New South Wales during 1998 to identify the amount of funds spent on materials, finding that funds spent were 10 percent below the national average. As a consequence, the Schools Educational Publishing Committee worked with a media consultant to build community interest in a campaign leading up to the New South Wales state election in March 1999 to attract increased funding for the purchase of materials, and secured support for a continuing campaign from the Parents and Citizens Association.

4.1.2 Statement of the Problem

In part, the intent of this project is directed towards identifying the impact of standards-based and curriculum reforms in the United Kingdom, the United States and Australia on the development of materials. It was presumed that the emphasis placed on devising standards-based and curriculum reforms in these three countries was based on an assumption that publishing companies would respond by developing new materials that matched national and state standards or curriculum documents. There was little evidence, however, that educational research had determined the effects of standards-based and curriculum reforms on the content and design of new materials in measurable terms. Therefore, this study was intended to collect data about publishers' use of national and state standards or curriculum documents to determine the content and design of new materials. It was anticipated that the data would provide information for reaching judgments about the impact of standards-based and curriculum reforms on the work of publishing companies in developing and marketing new materials. The increase in policy-makers' understandings about the role of publishing companies in standards-based and curriculum reform, derived from an analysis of such data, is likely to be congruent with the rationale of furthering standards-based and curriculum reforms in each of the three countries.

4.1.3 Hypothesis

The study examined the hypothesis that the development and implementation of national standards and curricula, and their state-level variants will lead publishers of materials to incorporate elements from these reforms into their products. The study tested four research questions related to this general hypothesis. First, the influence of national standards or curriculum documents on the content of new materials developed by publishing companies was expected to be high, especially for the core subject areas. Second, publishing companies were expected to rely to the greatest extent on standards or curriculum documents that reflected large, rather than small, markets in developing their own

products. That is, publishers referred to documents published by national systems most frequently, then large state systems especially those that mandate state-level adoption of materials, and finally small state systems. Third, standards or curriculum documents were expected to affect publishers' choices in the subject matter more than other features of their new products. Fourth, the application by publishers of subject matter from standards or curriculum documents was expected to affect a range of aspects relating to design in their new products that would influence selection decisions.

4.2 Results

4.2.1 Influence of Curriculum Documents

4.2.1.1 National Documents

First, the study sought to identify publishers' perceptions about the impact of the national documents of each country on the content of their companies' products. It was expected that the influence of national documents on the content of new materials would be high, although this influence would be highest for the core subject areas. Whilst the respondents in each of the three countries reported that national documents covering the core subject areas had the greatest influence, national documents covering technology, foreign language, health and physical education, and the arts ranged from high to low influence.

As shown in Table 1, the British respondents indicated that the extent of influence of national documents reflected this pattern.

TABLE 1

DISTRIBUTION OF BRITISH RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF THE SUBJECTS IN THE NATIONAL CURRICULUM FOR ENGLAND AND WALES ON THE CONTENT OF THEIR PRODUCTS BY EXTENT

Subject	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	uncertain	no response	total
- English	11 (78.6%)	2 (14.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (7.1%)	14
- Mathematics	12 (85.7%)	1 (7.1%)	0 (0.0%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	14
- Science	10 (71.4%)	1 (7.1%)	1 (7.1%)	2 (14.3%)	0 (0.0%)	0 (0.0%)	14
- Design and Technology	10 (71.4%)	0 (0.0%)	1 (7.1%)	2 (14.3%)	0 (0.0%)	1 (7.1%)	14
- Information Technology	9 (64.3%)	0 (0.0%)	0 (0.0%)	3 (21.4%)	0 (0.0%)	2 (14.3%)	14
- Modern Foreign Languages	8 (57.1%)	0 (0.0%)	0 (0.0%)	3 (21.4%)	0 (0.0%)	3 (21.4%)	14
- Geography	10 (71.4%)	0 (0.0%)	1 (7.1%)	1 (7.1%)	0 (0.0%)	2 (14.3%)	14
- History	11 (78.6%)	2 (14.3%)	0 (0.0%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	14
- Art	5 (35.7%)	1 (7.1%)	1 (7.1%)	4 (28.6%)	0 (0.0%)	3 (21.4%)	14
- Music	6 (42.9%)	0 (0.0%)	1 (7.1%)	5 (35.7%)	0 (0.0%)	2 (14.3%)	14
- Physical Education	7 (50.0%)	0 (0.0%)	0 (0.0%)	5 (35.7%)	0 (0.0%)	2 (13.3%)	14

As shown in Table 2, the American respondents indicated that the extent of influence of national documents reflected this pattern.

TABLE 2
DISTRIBUTION OF AMERICAN RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF THE NATIONAL STANDARDS ON THE CONTENT OF THEIR PRODUCTS BY EXTENT

Subject	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	uncertain	no response	total
- Arts							
Education	1 (25.0%)	1 (25.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4
- Civics and Government	1 (25.0%)	1 (25.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4
- Economics	1 (25.0%)	1 (25.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4
- English Language Arts	2 (50.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- Foreign Language	2 (50.0%)	0 (0.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4
- Geography	2 (50.0%)	0 (0.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4
- Health Education	2 (50.0%)	0 (0.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4
- History	2 (50.0%)	0 (0.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4
- Mathematics	2 (50.0%)	0 (0.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4
- Physical Education	2 (50.0%)	0 (0.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4
- Science	2 (50.0%)	0 (0.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4
- Social Studies	2 (50.0%)	0 (0.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4

As shown in Table 3, the Australian respondents indicated that the extent of influence of national documents reflected this pattern.

TABLE 3

DISTRIBUTION OF AUSTRALIAN RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF THE NATIONAL STATEMENTS ON THE CONTENT OF THEIR PRODUCTS BY EXTENT

Learning Area	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	uncertain	no response	total
- Mathematics	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- Science	2 (50.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- English	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- Studies of Society and Environment	2 (50.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	4
- Health and Physical Education	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- Arts	1 (25.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	4
- Technology	1 (25.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	4
- Languages other than English	2 (50.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	4

4.2.1.2 Country or State Documents

Second, the study sought to identify publishers' perceptions about whether the standards or curriculum documents on which they set the greatest store for developing new products reflected large market size. It was expected that publishing companies would refer to documents published by national systems most frequently, then large state systems especially those that mandate state-level adoption of materials, and finally small state systems. The respondents in each of the three countries reported that reference to particular standards or curriculum documents reflected the size of the market in which these documents were used.

As shown in Table 4, the British respondents indicated that the influence of Scotland's National Guidelines was moderate, when compared to the influence of the National Curriculum orders for England and Wales shown in Table 1.

TABLE 4

DISTRIBUTION OF BRITISH RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF THE CURRICULUM AREAS IN THE NATIONAL GUIDELINES FOR SCOTLAND ON THE CONTENT OF THEIR PRODUCTS BY EXTENT

Curriculum Area	yes, to a great extent	yes, to some extent	yes, to a little	no, not at all	uncertain	no response	total
- Language	2 (14.3%)	7 (50.0%)	1 (7.1%)	2 (14.3%)	1 (7.1%)	1 (7.1%)	14
- Mathematics	3 (21.4%)	6 (42.9%)	1 (7.1%)	3 (21.4%)	1 (7.1%)	0 (0.0%)	14
- Environmental Studies	2 (14.3%)	5 (35.7%)	1 (7.1%)	3 (21.4%)	1 (7.1%)	2 (14.3%)	14
- Expressive Arts	1 (7.1%)	5 (35.7%)	2 (14.3%)	4 (28.6%)	1 (7.1%)	1 (7.1%)	14
- Religious and Moral Education	1 (7.1%)	4 (28.6%)	5 (35.7%)	2 (14.3%)	1 (7.1%)	1 (7.1%)	14
- Secondary Stages	1 (7.1%)	5 (35.7%)	2 (14.3%)	2 (14.3%)	2 (14.3%)	2 (14.3%)	14

As shown in Table 5, the British respondents indicated that the influence of the Northern Ireland Curriculum orders was low, when compared to the influence of the National Curriculum orders for England and Wales shown in Table 1.

TABLE 5

DISTRIBUTION OF BRITISH RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF THE AREAS OF STUDY IN THE NORTHERN IRELAND CURRICULUM ON THE CONTENT OF THEIR PRODUCTS BY EXTENT

Curriculum Area	yes, to a great extent	yes, to some extent	yes, to a little	no, not at all	uncertain	no response	total
- English	1 (7.1%)	8 (57.1%)	1 (7.1%)	2 (14.3%)	1 (7.1%)	1 (7.1%)	14
- Mathematics	1 (7.1%)	8 (57.1%)	1 (7.1%)	3 (21.4%)	1 (7.1%)	0 (0.0%)	14
- Science and Technology	1 (7.1%)	8 (57.1%)	1 (7.1%)	3 (21.4%)	1 (7.1%)	0 (0.0%)	14
- Environment and Society	0 (0.0%)	7 (50.0%)	2 (14.3%)	3 (21.4%)	1 (7.1%)	1 (7.1%)	14
- Creative and Expressive Studies	0 (0.0%)	6 (42.9%)	2 (14.3%)	4 (28.6%)	1 (7.1%)	1 (7.1%)	14
- Language Studies	0 (0.0%)	6 (42.9%)	2 (14.3%)	3 (21.4%)	1 (7.1%)	2 (14.3%)	14

The American respondents indicated that the practice of state-level adoption in populous states, such as California and Texas, influenced the extent to which they referred to standards and curriculum documents issued by these states as shown in Table 6.

TABLE 6

DISTRIBUTION OF AMERICAN RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF STATE STANDARDS AND FRAMEWORKS BY 'ADOPTION' AND 'OPEN' REGIONS ON THE CONTENT OF THEIR PRODUCTS BY EXTENT

Subject	yes, to a great extent	yes, to some extent	yes, to a little	no, not at all	uncertain	no response	total
- north-eastern 'open' states	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0 %)	4
- south-eastern 'adoption' states	2 (50.0%)	1 (25.0%)	1(25.0%)	0 (0.0 %)	0 (0.0%)	0 (0.0%)	4
- mid-western 'open' states	2 (50.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- south-western 'adoption' states	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- western 'adoption' states	3 (75.0%)	1 (25.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	4
- western 'open' states	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4

The Australian respondents indicated that they referred to curriculum documents issued by populous states to a greater extent than those documents issued by smaller states and territories as shown in Table 7.

TABLE 7

DISTRIBUTION OF AUSTRALIAN RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF STATE AND TERRITORY FRAMEWORKS AND SYLLABUSES ON THE CONTENT OF THEIR PRODUCTS BY EXTENT

Subject	yes, to a great extent	yes, to some extent	yes, to a little	no, not at all	uncertain	no response	total
- ACT (P-10)	0 (0.0%)	1 (25.0%)	0 (0.0%)	3 (75.0%)	0 (0.0%)	0 (0.0 %)	4
- ACT (11-12)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (100.0 %)	0 (0.0%)	0 (0.0%)	4
- NSW (K-10)	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- NSW (11-12)	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- NT (8-12)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (75.0%)	1 (25.0%)	0 (0.0 %)	4
- QLD (P-10)	2 (50.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- QLD (9-12)	2 (50.0%)	1 (25.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4
- SA (11-12)	0 (0.0%)	0 (0.0%)	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	4
- TAS (9-12)	0 (0.0%)	0 (0.0%)	1 (25.0%)	3 (75.0%)	0 (0.0%)	0 (0.0%)	4
- VIC (K-10)	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- VIC (11-12)	3 (75.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4
- WA (11-12)	0 (0.0%)	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- WA (11-12)	0 (0.0%)	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	4

4.2.1.3 Factors affecting the Influence of Curriculum Documents

An open-ended item enabled respondents to list factors they perceived explained the nature of the influences of both national and country or state standards or curriculum documents on their new products. Of the twelve British respondents specifying particular factors, four referred to issues relating to market size. One respondent stated: "We have far more material for the National Curriculum of England and Wales, and that is what sells to a much larger extent". Another respondent stated: "Our biggest market is England and Wales, and whilst we seek to meet the needs of Scottish and Northern Irish curriculums, this cannot be at the expense of meeting National Curriculum needs". Another respondent stated: "While we take into account the Scottish and Northern Ireland curriculums, we see our main market as England, and therefore our books are linked most closely to the English National Curriculum". Another respondent stated: "England - much bigger market". Another two respondents cited more general factors referring to the marketplace. One respondent stated: "We do matching charts for Scotland and Northern Ireland, and increasingly are 'versioning' our main courses to specifically match requirements". Another respondent stated: "The influence is the curriculum for the general education of the pupil. The nature is the support it gives to both, therefore satisfying the market needs". Another three respondents cited more general factors referring to the curriculum. One respondent stated: "Obviously, we need to produce educational materials that conform to the

requirements of the National Curriculum, otherwise teachers will not want to use them". Another respondent stated: "We don't develop materials which are not curriculum-specific". Another respondent stated: "Change in curriculum leads to schools changing their schemes of work, therefore a natural time to evaluate new material. Only material which fits our demands will prosper". The remaining respondents cited other factors.

Of the four American respondents specifying particular factors, two referred to market size. One respondent stated: "We manufacture 'state-specific' books in social studies and math to accommodate such factors as TAAS, TOSS, TEKS, California initiatives, etc." Another respondent stated: "Whenever possible we adapt publications to curriculum standards in the states with the largest population bases - NY, TX, FL, CA, IL". In contrast, one respondent stated: "We are dedicated to each and every states' standards and curriculum frameworks". The remaining respondent cited another factor: "We read and use them to plan a scope and sequence. Supplemental materials that support basal programs are highly influenced".

Of the three Australian respondents specifying particular factors, two referred to market size. One respondent stated: "State school enrolments and state textbook market, for example, whether book list or book hire". Another respondent stated: "market size". The other respondent cited more general factors referring to the curriculum: "Schools require resources that meet the needs of today's curriculum".

4.2.2 Content

4.2.2.1 Importance of Particular Features

Third, the study sought to identify publishers' perceptions about the influence of standards and curriculum documents on particular features in their new products. It was expected that standards and curriculum documents would be more important in affecting publishers' choices about subject matter than other features. The respondents in each of the three countries reported that standards and curriculum documents were important in affecting publishers' choices about identifying and incorporating essential strands of knowledge, skills and processes, and aligning elements of the curriculum in new products than influencing choices about the media of new products.

As shown in Table 8, the British respondents indicated that the importance of curriculum documents reflected this pattern.

TABLE 8

DISTRIBUTION OF BRITISH RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF NATIONAL CURRICULUM ORDERS ON PARTICULAR FEATURES IN PRODUCTS BY EXTENT

Feature	yes, very im- portant	yes, im- portant	no, not very im- portant	no, not at all im- portant	uncertain	no response	total
- identifying knowledge, skills and processes	10 (71.4%)	3 (21.4%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	14
- identifying media	1 (7.1%)	7 (50.0%)	4 (28.6%)	1 (7.1%)	1 (7.1%)	0 (0.0%)	14
- incorporating knowledge, skills and processes	1 (7.1%)	5 (35.7%)	2 (14.3%)	4 (28.6%)	1 (7.1%)	1 (7.1%)	14
- aligning curriculum elements	10 (71.4%)	2 (14.3%)	2 (14.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	14

As shown in Table 9, the American respondents indicated that the importance of standards or curriculum documents reflected this pattern.

TABLE 9

DISTRIBUTION OF AMERICAN RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF NATIONAL AND STATE STANDARDS ON PARTICULAR FEATURES IN PRODUCTS BY EXTENT

Feature	yes, very im- portant	yes, im- portant	no, not very im- portant	no, not at all im- portant	uncertain	no response	total
- identifying knowledge, skills and processes	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- identifying media	1 (25.0%)	1 (25.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- incorporating knowledge, skills and processes	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- aligning curriculum elements	2 (50.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4

As shown in Table 10, the Australian respondents indicated that the importance of curriculum documents reflected this pattern.

TABLE 10

DISTRIBUTION OF AUSTRALIAN RESPONDENTS' PERCEPTIONS ABOUT THE INFLUENCE OF THE NATIONAL STATEMENTS AND STATE CURRICULA ON PARTICULAR FEATURES IN PRODUCTS BY EXTENT

Feature	yes, very im- portant	yes, im- portant	no, not very im- portant	no, not at all im- portant	uncertain	no response	total
- identifying knowledge, skills and processes	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- identifying media	0 (0.0%)	1 (25.0%)	3 (75.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- incorporating knowledge, skills and processes	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- aligning curriculum elements	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4

4.2.2.2 Content Analyses of Products

Three publishing companies from each country submitted products they claimed to have been influenced by national standards and curricula, and their state-level variants. The presentation of the analyses of these nine products is ordered by country of origin, and the alphabetical listing of each publishing company in Appendices A, B and C.

The content analysis of each product consists of six components: introductory information identifying its physical characteristics; its intents; its contents; its methodology; the means of student assessment; and the history of its development. In addition, this information was compared with available evidence concerning the compatibility of the material with particular standards or curricula for jurisdictions in which the product is used.

4.2.2.2.1 English Direct

Collins Educational submitted *English Direct*, a basal language arts program consisting of teaching resources books and student's books published in 1998 for grades 7 to 9. The purpose of *English Direct* is to help students develop their basic language skills. Each student's book covers the same set of ten units titled Expressing Opinions, Words and Pictures, Storytelling, Personal Writing, Developing Arguments, Poetry, Stories from the Past, Conveying Information, Advice and Warnings, and Scripts and Scriptwriting. Each

unit in each student's book deals with a particular genre, focusing on speaking and writing for different purposes, poetry, scripts and scriptwriting, media texts and stories from the past. As each unit builds on a language focus designed to assist students develop key skills, it is intended they are covered sequentially. The methodology uses discussion and questioning techniques, viewing, listening and answering techniques, inquiry, role-playing, and approaches to develop creativeness. The teaching resources books offer specific suggestions about using the units in the classroom. The units contain cloze passages, true-and-false exercises, and comprehension exercises. Two authors wrote *English Direct*.

Collins Educational stated that *English Direct* covers the National Curriculum requirements for key stage 3, although correlations are not provided.

4.2.2.2.2 Abacus

Ginn and Company submitted the first edition of *Abacus*, a basal mathematics program published in 1999. The second edition, published in 2001 for reception to grade 6, consists of a multimedia kit of twelve components. These are teachers' books, a mental warm-up activities' book, teacher cards, an activity book, workbooks, photocopy masters, simmering activities books, challenge books, numeracy support books, homework books, assessment books, and a resource bank. The resource bank consists of place value cards, number line, number demonstration cards, group pack number cards, class pack number cards, pupil pack number cards and wall charts. The purpose of *Abacus* is to provide direct and interactive teaching of mathematical skills and facts by applying the Framework for Teaching Mathematics used in the National Numeracy Strategy. The subject matter is covered in units consisting of two types. The units for Number are titled N1 Numbers to 100, N2 Place-value, N3 Addition, N4 Money, N5 Subtraction, N6 Addition, N7 Numbers to 100, N8 Number patterns, N9 Ordering, N10 Addition, N11 Money, N12 Multiplication, N13 Multiplication, N14 Fractions, N15 Numbers to 100, N16 Place-value, N17 Addition, N18 Addition, N19 Subtraction, N20 Numbers to 100, N21 Addition/Subtraction, N22 Place-value, N23 Addition, N24 Subtraction, N25 Multiplication, N26 Division, N27 Fractions, N28 Numbers to 100, N29 Ordering, N30 Addition, N31 Addition/Subtraction, N32 Addition, N33 Addition/Subtraction, N34 Numbers to 1000, N35 Doubling/Halving, N36 Place-value, N37 Addition/Subtraction, N38 Addition, N39 Multiplication, N40 Division, N41 Fractions, D1 Sorting, D2 Sorting, D3 Block Graphs, D4 Sorting, and D5 Tables. The units for Measures, Shape and Space are titled M1 Length, M2 Length, M3 Time, M4 Time, M5 Weight, M6 Capacity, M7 Time, M8 Capacity, M9 Time, M10 Time, M11 Time, S1 3-d Shape, S2 Angle, S3 2-d Shape, S4 2-d Shape, S5 Angle, and S6 Symmetry. The units may be sequenced according to a suggested teaching order, or alternatively the teacher may choose an alternative sequence to match the planning grids for the Framework for Teaching Mathematics. Consistent with the National Numeracy Strategy, the

methodology is eclectic, but based on the daily lesson comprising of three parts. First, an oral or mental starter consists of number work. Second, the main teaching activity involves a whole class introduction followed by paired work, group work, paired investigations or individual practice. Third, a plenary session involves student reports, rehearsal of the main teaching objective, and an explanation of the content to be covered next. Both informal and formal assessments are applied in *Abacus*. Informal assessment may be applied at different points during the teaching of the units. Assessment sheets in the Assessment Book may be administered for formal assessment of units. Written work for end-of-year or end-of-key-stage assessments may be recorded using an assessment grid. Two authors wrote *Abacus*. Seven consultants, including two who specialised in information technology, supported the authors.

Ginn and Company correlated the units in *Abacus* with the teaching objectives in *The National Numeracy Strategy: Framework for Teaching Mathematics from Reception to Year 6* (Department for Education and Employment, 1999).

4.2.2.2.3 DrugSense

New Media Press submitted *DrugSense*, a basal drug education material, consisting of a teacher's guide and a CD-ROM published in 1997 for the upper primary and lower secondary levels. The purpose of *DrugSense* is to provide drug education based on currently accepted principles and practices. The subject matter is covered in nine lesson plans presented in the teacher's guide and three parts of the CD-ROM. The lesson plans are titled Healthy Lifestyles, Rules and Why We Have Them, Medicines, Caffeine, Alcohol, Tobacco, Solvents, Glue, Aerosols and Gases, Illegal Drugs, and What to Do if In addition to a teacher's section, the CD-ROM includes three parts: D-Street consists of seven buildings, each containing drug-related activities; D-Stories consists of five scenarios, each containing three stories; and D-Tools presents two software applications designed to foster creative use of information technology. The two activities in the D-Street Arcade are titled Quizzler 2000, which focuses on what drugs look like, and Puzzler, which focuses on classifying drugs. The activity in the D-Street Chemist involves reading instructions on medicine packages. The three activities in the D-Street Hospital are titled Naming Organs, Jigsaw, and the Effects of Drugs. The two activities in the D-Street Police Station are titled Definition of a Police Officer, and Freedoms. The two activities in the D-Street Pub are titled Mat Match, which conveys the idea of units, and Cat & Match, which conveys the idea of alcoholic strength. The D-Street Library provides eighteen books presenting information on particular drugs as well as on Drug Groups, Drugs and the Law, Where to Find Help, and a Dictionary. The D-Street School provides users with access to D-Stories and D-Tools. The five Scenarios in D-Stories are titled Under Pressure, Stand Up for Yourself, Getting Help, What should I Think?, and Be Responsible. The software

applications in D-Tools provide a Presentation Maker designed to help users put together multimedia slideshows, and a Certificate Maker designed to generate certificates. The lesson plans are intended to be used preferably with the activities, scenarios and tools on the CD-ROM, but may be used independently. *DrugSense* employs an eclectic methodology, including discussion and questioning, role-playing, simulation and games, and inquiry. The means for student assessment have not been specified in the product. *DrugSense* was developed by a consortium consisting of the Hertfordshire County Council Education Department, Hertfordshire Drug Action Team, partner agencies in the Hertfordshire Drug Education Forum, Hertfordshire Rotary clubs, and New Media Press following a competitive contract agreed to in January 1996. *DrugSense* was trialed in seven schools.

The lesson plans, D-Street activities, D-Stories scenarios and D-Tools in *DrugSense* have been linked to the programs of study in the revised National Curriculum published in 1995, and to *Drug Education: Curriculum Guidance for Schools* (School Curriculum and Assessment Authority, 1995).

4.2.2.2.4 McGraw-Hill Reading

McGraw-Hill School Division submitted *McGraw-Hill Reading*, a basal reading program published in 2001, consisting of a multimedia kit of teacher editions, pupil editions, literature anthology teacher editions, literature anthology pupil editions, levelled books, big books, practice books, spelling practice books, and ancillaries for kindergarten to grade 6. The purpose of *McGraw-Hill Reading* is to motivate students to read fiction, non-fiction and expository text. The subject matter in the pupil editions is covered in units consisting of a phonics rhyme, a story, story questions and activities, study skills linked to a subject area, and a test power. The literature anthologies consist of story questions, story activities, study skills and a test power. The levelled books present the steps of reading at students' reading levels. Each unit follows a five-day plan, presenting background, vocabulary, and teaching of the content. The methodology uses practice and drill, involving direct teaching in phonics using decodable literature. *McGraw-Hill Reading* provides three types of assessment. Diagnostic assessment allows teachers to identify weaknesses in reading. Unit tests, mid-year tests and end-of-year tests allow teachers to assess students' progress. Test preparation materials allow teachers to prepare students for standardised tests. *McGraw-Hill Reading* was written by a team of authors supported by a group of consulting authors. Unit stories were written and illustrated by contracted authors and illustrators.

McGraw-Hill School Division published a Texas edition of *McGraw-Hill Reading*, which contains test items linked to the Texas Assessment of Academic Skills.

4.2.2.2.5 Literacy Place

Scholastic submitted the second edition of *Literacy Place*, a basal reading program published in 2000. *Literacy Place* consists of a multimedia kit of teacher editions, big books, sentence strips, read alouds, audiocassettes, phonics manipulatives and work books for kindergarten, and teacher editions, pupil editions, practice books, spelling resource books and mentor videos for grades 1 to 5. The purpose of *Literacy Place* is to teach decoding, build vocabulary and comprehension, model writing through reading, and evaluate to inform teaching and monitor progress. The subject matter is covered in six topics across each grade level to form a matrix of 36 units. The units for Personal Voice are titled Stories About Us, Hello!, Snapshots, What's New, Chapter by Chapter, and Making a Difference. The units for Problem Solving are titled See It, Solve It, Problem Patrol, Super Solvers, Big Plans, What An Idea, and It's a Mystery. The units for Teamwork are titled All Together Now!, Team Spirit, Lights! Camera! Action!, On the Job, Discovery Teams, and Voyagers. The units for Creative Expression are titled Express Yourself, Imagine That, Story Studio, Hit Series, The Funny Side, and In the Spotlight. The units for Managing Information are titled I Spy!, Information Finders, Animal World, Time Detectives, Nature Guides, and America's Journal. The units for Community Involvement are titled Join In, Home Towns, Lend a Hand, Community Quilt, It Takes a Leader, and Cityscapes. Each unit follows a five-day plan, presented as teaching objectives and daily pacing suggestions. The methodology uses practice and drill, involving direct teaching in phonics and phonological awareness reflecting current research on how children learn to read. *Literacy Place* provides three types of assessment. Diagnostic and prescriptive assessment opportunities are integrated in the teacher editions. Selection tests, unit tests and end-of-year tests allow teachers to assess students' progress. *Literacy Place* incorporates the Scholastic Reading Inventory linked to standardised tests, which allows teachers to use the same framework to plan teaching, and manage independent reading. *Literacy Place* was written by a team of fifteen authors, supported by eighteen consultants with expertise in particular specialist areas. A five-member National Advisory Council oversaw the development of *Literacy Place*, whilst state advisory panels of teachers advised on the development of state editions.

Scholastic correlated *Literacy Place* to the relevant subject areas of the state standards for Arizona, California, Connecticut, District of Columbia, Illinois, Maryland, Massachusetts, Michigan, Minnesota, New York, North Carolina, Ohio, Pennsylvania, Texas, and Washington.

4.2.2.2.6 Momentum Literacy Program

Troll Communications submitted the components for Step 3, Level D, of the *Momentum Literacy Program* published in 1998. Step 3, which consists of 40 texts graded into four levels, is suitable for children aged approximately 9 years. The purpose of the *Momentum*

Literacy Program is to develop the process of reading and writing using the technique of reading records and analyses. Level D consists of a Teacher Pack and ten texts titled *Adventure Finds Alicia*, *All Kinds of Reptiles*, *Animal Families*, *Being Carried*, *A Bit of a Muddle*, *A Crew for Captain Kate*, *Harry and the Big Hill*, *Magic Boots*, *Swamps*, *Marshes*, and *Other Wetlands*, and *What's the Difference?* The Teacher Pack outlines the philosophy of the *Momentum Literacy Program*, provides daily notes for using each text in five, one-hour lessons over five days, and presents a set of photocopiable masters for each text consisting of three for reading tasks and two for writing and word tasks. The ten texts in the series, which are organised in an approximate gradient of difficulty, provide balance between fiction and non-fiction. The daily notes for each text incorporate a lesson plan based on a common framework of teaching tasks supported by strategies and teaching points, and things to observe, followed by a suggested reading record and analysis sample, the reading task sheets, and the writing and word task sheets. It is intended that teachers place children into manageable groups of about ten, based on similar levels of understanding by taking reading records before assigning appropriate texts. The methodology uses viewing, listening and answering techniques based on reciprocal reading, reading comprehension, writing conferences, and effective group and individual intervention for slow progressing students. Teachers with expertise as reading recovery tutors, supported by advice from a consultant, wrote the teacher packs for the *Momentum Literacy Program*. Authors of children's literature wrote the texts.

The respondent claimed that the *Momentum Literacy Program* had been influenced by the whole language approach used previously in California for teaching reading. The compatibility of the product's approach was checked against the approach advocated in the *Reading/Language Arts Framework for California Public Schools* (California Department of Education, 1999). This framework was the first for the subject area to be aligned to the California Content Standards adopted by the California State Board of Education in December 1997. The preface to the framework states: "The *Reading/Language Arts Framework* replaces the 1987 *English-Language Arts Framework* and relies heavily on the converging research base in beginning reading". This statement is elaborated further in one of ten guiding principles. It states: "The Framework emphasises that children must be fluent readers by the end of third grade and that third grade competence depends on the specific and cumulative mastery of skills in kindergarten through grade 3 together with the development of positive attitudes toward reading and writing. Consistent with the standards, the framework recognises that the advanced skills of comprehending narrative and informational text and literary response and analysis and the development of eloquent prose all depend on solid vocabulary, decoding, and word recognition skills fostered in the early grades and maintained throughout the school years". As the framework does not

endorse a whole language approach to teaching reading, the *Momentum Literacy Program* is incompatible with the approach for teaching reading prevailing in California since 1999.

4.2.2.2.7 English Elements

John Wiley & Sons Australia submitted *English Elements*, a basal language arts program for grades 7 to 10 consisting of a series of four textbooks, of which Books 1 and 2 were published in 1997 and Books 3 and 4 were published in 1998. The purpose of *English Elements* is to provide a resource to assist in teaching and assessing learning outcomes for English. Each book in the series covers sixteen units. The units in Book 1 are titled Feet on the Ground, Working with Nouns and Pronouns, Working with Verbs, Working with Adjectives and Adverbs, Short Stories, Poetry Forms, Play-making, Novels, Instructions, Report Writing, Journals, Newspapers, Reading Images, Speaking Out, Fun with Horror, and Playing with Words. The units in Book 2 are titled Reach for the Sky, Exploring the Dictionary and Thesaurus, Phrases, Clauses and Sentences, Paragraphs, Creative Thinking and Writing, Exploring Short Stories, Poetry Skills, Drama Speaks, The Novel, Enter the Internet, Magazines, Do you Want to be a Radio Announcer?, Australia's Identity: Many in One, Life after Life?, Friendship - Getting it Together, and Playing with Words. The units in Book 3 are titled Freestyle, Refining our Work, Letters: The Fantastically Formal Kind, All the World's Desktop, More Power to the Speaker, Cues and Clues, Twisting the Ends, Imagine That!, Playing the Role, The Novel's View, Virtual Realities, Let's Rock, TV Soapies, The Wind at Work, Against the Odds, and Ideas for Writers. The units in Book 4 are titled The Fire Within, Language and Sport, Media Investigation, The Argumentative Essay, Picture Books, Adding your Voice: The Poetry of Life, Tragedy in Drama, With Style, Create that Job, The Language of Film, Hypersearch, Are you Game?, Issues, Animal Rights, War, and Writing to Stimulus. Each book includes language, genre, and thematic units, which offer flexibility in planning and should not be taught sequentially. *English Elements* uses an eclectic methodology, including didactic instruction, discussion and questioning, viewing, listening and answering, and techniques to develop creativeness. Each unit includes assessment sheets indicating the outcomes being assessed as well as criteria for the task. Four authors wrote Book 1, whilst two of these authors wrote Books 2 to 4.

John Wiley & Sons Australia correlated *English Elements* to the English Profile, and Victoria's original *Curriculum and Standards Framework* (Victorian Board of Studies, 1995).

4.2.2.2.8 ScienceWorld

Macmillan Education Australia submitted the first edition of *ScienceWorld*, a basal science program published in 1997. The components for the second edition, which consists of a multimedia kit of textbooks, workbooks, and test maker and solutions CD-ROMs, were

published in 2000 for grades 7 and 8 and in 2001 for grades 9 and 10. The purpose of *ScienceWorld* is to develop knowledge and skills in the chemical, physical, earth and biological sciences. Each textbook in the series consists of thirteen chapters. The chapters in *ScienceWorld 7* are titled Working in a Laboratory, Science Skills, Pushes and Pulls, Magnets, Body Senses, Our Bodies, Water, Chemical Reactions, The Earth in Space, Structures, How Things Work, What makes Things Living?, and Living Things and Places. The chapters in *ScienceWorld 8* are titled Mixing and Separating, Working Scientifically, Building Blocks of Life, The Living World, Energy in Our Lives, What are Things Made of?, The Earth and Beyond, Building Blocks of Matter, Electricity, Food for Life, Environments, Heat, and World of Microbes. The chapters in *ScienceWorld 9* are titled Investigating Reactions, Life in the Past, Living Together, Survival, Light and Sound, Earth's Air, Dynamic Earth, Everyday Substances, Using Electricity, Responding, Cells at Work, Our Energy Future, and Consumer Science. The chapters in *ScienceWorld 10* are titled Science is Investigating, Communications, Explaining Reactions, Acids and Bases, Road Science, Space Travel, The Universe, Genetics, Species Survival, Electrochemistry, Metals and Non-metals, Energy and Life, and Chemicals in the Environment. Each chapter consists of two or three sections, each containing text, activities, experiments, exercises and challenges. *ScienceWorld* uses an eclectic methodology including viewing, listening and answering techniques, inquiry approaches, and problem solving, heuristic and discovery approaches. Each chapter concludes with a summary test to be taken independently by students. Two authors, who were supported by a consultant, wrote *ScienceWorld*.

Macmillan Education Australia correlated the second edition of *ScienceWorld* to Victoria's revised *Curriculum and Standards Framework II* (Victorian Board of Studies, 2000), and the New South Wales Science syllabus for stages 4 and 5 published in 1998. In addition, Macmillan Education Australia published another version of the second edition of *ScienceWorld* for grades 8 to 10 for use in Queensland, South Australia and Western Australia.

4.2.2.2.9 The Millennium

R.I.C. Publications submitted *The Millennium*, a supplementary series of three workbooks for lower, middle and upper primary levels published in 1999. The purpose of *The Millennium* is to focus on different aspects of living over the past thousand years. Each workbook in the series covers ten topics. The lower workbook covers Cars, Clothing, Explorers, Families, Farming, Food, House, Inventions, Toys, and Water. The middle workbook covers Authors, Clothing, Communication, Cooking, Energy, Farming, Medicine, Sea Explorations, Toys and Games, and Transport. The upper workbook covers Building, Communications, Disasters, Explorers, Food, Flight, Industry, Inventions, Leaders, and Light. Each topic is covered in four sections by a fact sheet, comprehension

activities, word study activities, and creative activities. *The Millennium* may be used in Studies of Society and Environment, English or thematically across several learning areas. The components of the workbooks may be compiled into topic booklets, theme booklets, a file, scrapbooks, or several small groups of students can complete different topics. The methodology uses didactic instruction, questioning, listening, and answering techniques, inquiry techniques, and creative techniques. Each workbook concludes with an answer page, which presents multiple-choice items, cloze passages and other activities included in the text. No information is provided about the development of the product.

R.I.C. Publications correlated *The Millennium* to the student outcome statements, which have been cross-referenced to the learning outcomes in the *Curriculum Framework for Kindergarten to Year 12 Education in Western Australia* (Curriculum Council of Western Australia, 1998).

4.2.3 Design of Products

4.2.3.1 Effect of National Documents on the Design of Products

Fourth, the study sought to identify publishers' perceptions about the effect that their application of standards or curriculum documents had on particular aspects of educational design in new products. It was expected that the application of standards or curriculum documents would have greater effect on aspects associated with the subject matter content coverage within new products than on other aspects. The respondents in the three countries varied in their perceptions about the effect that application of standards or curriculum documents had on particular aspects.

As shown in Table 11, the British respondents indicated that the application of curriculum documents affected the content and usability of new products more than inclusiveness and cost.

TABLE 11
DISTRIBUTION OF BRITISH RESPONDENTS' PERCEPTIONS ABOUT THE EFFECTS
OF NATIONAL CURRICULUM ORDERS ON THE DESIGN OF THEIR PRODUCTS
BY EXTENT

Aspect	yes, to a great extent	yes, to some extent	yes, to a little	no, not at all	uncertain	no response	total
- content	10 (71.4%)	2 (14.3%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	1 (7.1 %)	14
- inclusiveness	8 (57.1%)	3 (21.4%)	0 (0.0%)	1 (7.1%)	1 (7.1%)	1 (7.1%)	14
- useability	10 (71.4%)	1 (7.1%)	1 (7.1%)	1 (7.1%)	0 (0.0%)	1 (7.1%)	14
- cost	5 (35.7%)	4 (28.6%)	2 (14.3%)	2 (14.3%)	0 (0.0%)	1 (7.1%)	14

As shown in Table 12, the American respondents indicated that the application of standards' documents affected all four aspects.

TABLE 12

DISTRIBUTION OF AMERICAN RESPONDENTS' PERCEPTIONS ABOUT THE EFFECTS OF NATIONAL AND STATE CONTENT STANDARDS ON THE DESIGN OF THEIR PRODUCTS BY EXTENT

Aspect	yes, to a great extent	yes, to some extent	yes, to a little	no, not at all	uncertain	no response	total
- content	2 (50.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- inclusiveness	3 (75.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- useability	2 (50.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- cost	2 (50.0%)	1 (25.0 %)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4

As shown in Table 13, the Australian respondents indicated that the application of curriculum documents affected the content of new products more than inclusiveness, usability and cost.

TABLE 13

DISTRIBUTION OF AUSTRALIAN RESPONDENTS' PERCEPTIONS ABOUT THE EFFECTS OF NATIONAL AND STATE CURRICULUM FRAMEWORKS ON THE DESIGN OF THEIR PRODUCTS BY EXTENT

Aspect	yes, to a great extent	yes, to some extent	yes, to a little	no, not at all	uncertain	no response	total
- content	2 (50.0%)	1 (25.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- inclusiveness	1 (25.0%)	2 (50.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	4
- useability	1 (25.0%)	2 (50.0%)	1 (25.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4
- cost	0 (0.0%)	1 (25.0 %)	1 (25.0%)	0 (0.0%)	2 (50.0%)	0 (0.0%)	4

4.2.3.2 Impact of Curriculum Uniformity on Product Development

An open-ended item enabled respondents to list reasons they perceived explained the effect of greater uniformity provided by national standards or curriculum documents on improving or hindering the development of new products. Of the eleven British respondents specifying particular reasons, only one attempted to explain how greater uniformity in the curriculum affected the publishing industry in various ways. This respondent stated: "The game has changed. Our job is to understand exactly what is required of schools by the National Curriculum and OFSTED, and solve the problem teachers face in implementing them. So key issues are: (1) being first to market; (2) getting realistic balance on the practicalities of implementing the curriculum in terms of real classes and real pupils; and (3) solving as best we can the class management issues. So for us there is now a clear task to be done to meet a clear market need - and that's what we do". Five respondents referred to the content of new products. One respondent stated: "Initially, I (together with other publishers) was concerned that the National Curriculum would mean

that all publishers would be producing very similar-looking materials. I don't think this has happened. Because the National Curriculum specified what should be taught, not how it should be taught, publishers are still able to create unique products". Another respondent stated: "Neither. Before, one of the things publishing companies did was to set part of the agenda - from choosing content in History to progression in Maths. Now we have to fit in with internal constraints. We have lost some freedom and gained some uniformity. The rules have changed - the game hasn't got easier or harder, just different." Another respondent stated: "It makes our books more structured and has probably improved the quality of new curriculum materials". Another respondent stated: "It's made it easier to focus on the key elements to be included in any textbook range". Another respondent stated: "Greater uniformity makes the market bigger, but anyway we only tackle the fundamentals - we 'cherrypick' key topics of universal relevance". A further two respondents referred to various effects relating to the marketplace. One respondent stated: "When the National Curriculum was first introduced, all publishers published resources claiming they were in line with the new curriculum; in practice, some were more than others. For some publishers, in an attempt to bring out materials, which were inclusive and all embracing of curriculum change, it meant that the resources were less user-friendly and more cumbersome. Some years on, it is now a 'given' that resources respond to curriculum needs, which means that the 'look and feel', customer service, price, etc., come more into play as distinguishing features between different publishers' resources. As a result, it is a far more competitive environment". The other respondent stated: "New requirements have stimulated new publishing projects, and clearly our guidelines have helped us to meet the needs of readers better - particularly in primary schools". Referring specifically to sequencing curriculum and materials' development, one respondent stated: "If the orders are given in good time then sensible transition from old to new can be effected. However, in many instances, the new orders have been sprung on publishers leaving us with redundant stock. The new orders generally do give a new impetus to sales." Referring specifically to authorship, one respondent stated: "Reviewing submissions is a lot easier. Encouraging authors to stay within guidelines make for much 'tighter', effective writing".

Of the four American respondents commenting on this issue, two referred to the relative ineffectiveness of the national standards in providing uniformity, when compared to the effect of state curricula. One respondent stated: "A national curriculum would be of great benefit if it was more closely adhered to, but at present the state curriculum controls most of our publishing decisions". The other respondent stated: "National standards have had little impact. State guidelines matter more". On the other hand, one respondent referred to effects on product development, stating that: "Greater uniformity reduces the need for state-specific books, and thereby reduces production costs". The remaining respondent

referred generally to the effect on product development, stating, "It has improved our company's development".

Of the three Australian respondents commenting on this issue, two referred to the relative ineffectiveness of the national statements in providing uniformity when compared to the importance of state curricula. One respondent stated: "National statements, if they had been adopted uniformly by the states, would have allowed us to publish fewer textbooks, but each of a higher quality at lower prices. The variation in state syllabuses (compared to national statements) forces us to publish a larger number of textbooks of comparatively lower quality and at greater prices". The other respondent stated: "National statements by themselves do a lot. However, each separate state has or is developing its own interpretation (often the same thing worded differently) effectively creating eight separate curricula which in the primary area say the same thing, but use selective language to make them 'state-specific'. This makes publishing difficult and reduces the overall quality of resources". On the other hand, the remaining respondent indicated that greater uniformity permitted state-specific revisions, stating that: "Uniformity has helped us rework materials to meet the specific needs of each curriculum".

4.3 Discussion

The study showed that the influence of national standards and curriculum documents on the content of new materials developed by publishing companies ranged from high to low. Whilst documents specified for the core subjects had the greatest influence, those covering technology, foreign language, health and physical education, and the arts ranged from high to low. One possible explanation for this effect may be that a higher proportion of the publishing companies responding to the survey published materials for the core subjects than other subjects. Another possible explanation is that fewer textbooks and other materials are used in schools for some subjects, such as health and physical education, and the arts. The different degrees of influence between national standards and curriculum documents in particular subjects suggest that materials published for the core subjects may be more closely aligned to national standards and curriculum documents than those in other subjects. However, it was not possible to substantiate this contention from the evidence presented in the content analysis of nine materials reported in this study. Further research, however, into the relationship between the extent to which publishing companies refer to national standards and curriculum documents in particular subjects is needed to establish the power of this relationship conclusively.

The study showed that publishing companies in each of the three countries referred to standards or curriculum documents that reflected large markets. The acknowledgment by publishers from each country that market size was an important determining factor

substantiated the reality that publishing companies needed to align the content of new products to the standards or curricula of jurisdictions with large populations to survive economically in the marketplace. The importance of this factor in determining the content of materials has long been recognised in the United States, where the influence of large population bases in California and Texas reinforced by the effect of state-level adoption has been referred to in educational literature. Moreover, the present study, showing that a similar effect occurs in the marketing strategies of publishing companies in the United Kingdom and Australia, suggests that this phenomenon may be universal.

The study showed that standards and curriculum documents influenced publishers' choices about subject matter content coverage more than other features. A likely explanation for this effect lies in the fact that these documents provide guidance only about subject matter content coverage. Publishers' perceptions about the importance of standards and curriculum documents in influencing subject matter content coverage in their products was supported by the findings of the content analysis of nine materials they submitted, indicating that eight of the materials were linked to relevant standards or curriculum documents. However, correlations were provided in only five of these materials. These findings appeared to confirm that publishers were influenced in their choice of subject matter for new materials by standards and curriculum documents, sometimes at a relatively early stage after their release.

The study showed that there was no agreement between respondents from different countries about the effect of the application of standards and curriculum documents on particular aspects in new products, although all respondents believed content was affected markedly. The British respondents indicated that content and usability were affected more than inclusiveness and cost. The American respondents indicated that all aspects were affected, although inclusiveness rated higher than the other aspects. The Australian respondents indicated that content was affected more than inclusiveness, usability and cost. One possible explanation for this variation may lie in different cultural attitudes prevailing in each country. For instance, the greater emphasis given to research in the United States on textbooks to issues covering the treatment of race and gender may have modified American publishers' attitudes about these issues more than their counterparts in the United Kingdom and Australia.

The main limitation of the study related to the method of sampling, and the inappropriateness of applying statistical tests to analyse the data. In the first instance, the difficulty in defining the population of companies involved in publishing materials in each of the three countries led the researcher to select an unrepresentative sample. In the second instance, the relatively high attrition rate from the sample meant that the small number of

cases resulted in sufficient sampling error to make the use of statistical analysis for testing significance impracticable.

4.4 Conclusion

The findings of this study into the publishing industry show that its role is crucial for the development of materials used in schools in each of the three countries. In each country, the national association of publishers plays an important role in stimulating research into various aspects relating to materials, reforming the materials' marketplace, and providing various services to members. In each country, the national association of publishers appears to provide the most important lobby influencing policy-makers' decisions concerning the role of textbooks and other materials in the curriculum.

The survey of publishers indicated that their perceptions about the impact of standards-based and curriculum reforms on their new products confirmed a view that the release of national and state standards and curriculum documents is having a profound effect on the content of new materials. This conclusion is corroborated by the content analysis of materials submitted by respondents, which indicated publishing companies are generally aligning the content of their products to standards and curriculum documents.

Whilst the publishing industry forms the initial institution through which materials proceed between development and use, educational systems play the most important roles in the selection of materials and their use in classrooms. The remaining chapters in this thesis examine the roles of educational systems in each of the three countries in producing national and state standards and curriculum documents, as well as providing various strategies for selecting and using materials.

CHAPTER 5

NATIONAL CURRICULUM REFORMS IN THE UNITED KINGDOM

Since the late 1980s, reform of the curriculum in the United Kingdom has focused on developing and implementing curriculum frameworks, essentially variants of a common model adapted to the regional contexts of England and Wales, Scotland, and Northern Ireland. Except for Scotland, policy-makers delegated the role of developing these curricula to national curriculum agencies in a closed process characterised by exclusion of the wider community, a situation that contrasted markedly with those processes applied in the United States. Widespread opposition to the imposition of prescriptive national curricula in the early 1990s led to extensive efforts at revision aimed at reducing the degree of prescription.

The purpose of this chapter is to examine the impact of decisions in curriculum planning on the system for developing, selecting and using resources in the materials' marketplace of the United Kingdom. An assumption underlying this rationale is that the development, selection and use of resources are dependent on the processes and products of curriculum reform. Although national curriculum agencies are not responsible for developing and selecting the resources used in British schools, this chapter is intended to identify how the context for curriculum reform has impinged on these agencies acquiring a role in determining the development, selection and use of resources.

5.1 England

5.1.1 Historical Background

The National Curriculum legislated through the British parliament as part of the Education Reform Act of 1988 originated in regulations issued by the Board of Education in 1902 prescribing syllabuses for English, Mathematics, Science, History, Geography, Foreign Languages, Drawing, Physical Exercise, and Manual Work for boys or Housewifery for girls. Aldrich (1988) argued that the Education Reform Act marked a reassumption of authority by the central government over the school curriculum, relinquished in primary schools during the late 1920s and in secondary schools with the passage of the Education Act of 1944. These changes had ceded control over the curriculum, except in matters of religious education, to local education authorities. Kelly (1990) contended that the Education Act of 1944 attempted to implement egalitarian principles, carried through progressively by raising the school leaving age, introducing comprehensive secondary education, abolishing selection procedures such as the eleven-plus test, introducing mixed ability groupings, and establishing the Certificate of Education (CSE). This egalitarian

philosophy was also reflected in a series of influential reports. Recommendations on educational provisions for 15- to 18-year-olds were presented in the Crowther Report (Central Advisory Council for Education, 1959). Recommendations on education for less able students in secondary schools were presented in the Newsom Report (Central Advisory Council for Education, 1963). Recommendations on higher education were presented in the Robbins Report (Committee on Higher Education, 1963). Recommendations on primary education were presented in the Plowden Report (Central Advisory Council for Education, 1967). The establishment of the Schools Council for Curriculum and Examinations in October 1964, which focused on the needs of students in secondary schools and early school leavers, also supported the development of an egalitarian educational system.

A return to more traditional values, however, was anticipated in a series of Black Papers (Cox and Dyson, 1969a; Cox and Dyson, 1969b; Cox and Boyson, 1977), which claimed that these innovations caused declining standards of student attainment in basic skills. The Manpower Services Commission, established in 1974 to develop programs to correct perceived mismatches between school curricula and employers' needs, introduced the Youth Opportunities Programme, the Youth Training Scheme, and the Technical and Vocational Educational Initiative. These changes to more traditional values were given credence in the rhetoric of the Labour Prime Minister, James Callaghan, in a speech at Ruskin College in October 1976, when he criticised the teaching profession for failing to take account of economic needs in education. This speech was based on a call to introduce a core curriculum, a concept put forward in a report by the Department of Education and Science (1976), and developed further in a discussion paper (Department of Education and Science, 1977), which argued that greater uniformity was required in the curriculum. Following the return to government of the Conservative party in 1979, the Secretary of State for Education and Science, Mark Carlisle, and the Secretary of State for Wales, Nicholas Edwards, produced a consultation paper outlining a core curriculum (Department of Education and Science Welsh Office, 1980). They also invited Her Majesty's Inspectorate (HMI) to formulate a view on the curriculum (Department of Education and Science, 1981), and published advice for local education authorities to improve the curriculum (Department of Education and Science Welsh Office, 1981). Sir Keith Joseph, Secretary of State for Education and Science from 1981 to 1986, adopted a more interventionist stance on curriculum reform. At the North of England Conference held at Sheffield in January 1984, he announced the government's plans to define objectives for the school curriculum. The sentiments expressed in this speech were later translated into policy with the presentation to parliament of a report arguing that the government should improve curriculum planning in schools amongst other initiatives (Department of Education and Science, 1985).

However, Joseph's failure to introduce legislation to effect these improvements led to his replacement by Kenneth Baker in May 1986. Taylor (1995) argued that Baker's appointment led to a contest with Prime Minister Margaret Thatcher's advisors in the Downing Street Policy Unit over the nature of curriculum content and how to proceed with its implementation. As a first initiative, Baker announced a plan at the Conservative Party Conference, held in October 1986, to establish city technology colleges, funded by the private sector, to offer a new type of schooling in inner urban areas. In order to pre-empt any moves by Thatcher's advisors, Baker stated during an interview on television in December 1986 that the Conservative government would introduce a National Curriculum as part of an education reform bill, if returned at the forthcoming election. Baker's view also prevailed in the contest over the content of the curriculum. With the assistance of senior officials from the Department of Education and Science, Baker developed a ten-subject curriculum in opposition to a curriculum dominated by syllabuses for English, Mathematics and Science, proposed by the Downing Street Policy Unit. In order to meet Prime Minister Thatcher's demands, however, Baker and the Department of Education and Science finally agreed on a ten-subject curriculum divided into two parts: a core foundation of English, Mathematics and Science; and a foundation consisting of the remaining seven subjects.

The radical reform of education, presented in the 1987 Conservative Party election manifesto, was not matched by the policies of either the Liberal-Social Democratic Alliance or the Labour Party. Following the General Election of June 1987, the re-elected Conservative government published six consultation documents to prepare the way for a major education reform bill. The consultation document on the National Curriculum presented a rationale, set out its components, planned legislation, specified a time frame for its implementation, and arrangements for its support (Department of Education and Science, 1987). The Conservative government introduced legislation into parliament during November in the form of the Education Reform Bill, which provided nine essential elements, including a National Curriculum and a national system for testing and assessment. Other elements referred to changes in funding by providing grant maintained status to schools funded by the Department of Education and Science instead of local education authorities, providing financial delegation to schools and further education colleges, and setting up funding councils for polytechnics, colleges and universities. In addition to establishing city technology colleges and offering corporate status to polytechnics and major colleges, the Inner London Education Authority would be abolished. The Education Reform Act was passed in 1988, in spite of opposition from teachers' unions and educators.

5.1.2 Formation of National Agencies

In order to develop, implement and monitor the National Curriculum and the accompanying assessment system in England, the Education Reform Act enacted for the foundation of two new agencies in August 1988. The National Curriculum Council (NCC), an agency governed by a fifteen-member council, was established to conduct consultations on the subjects for the National Curriculum through its committees, and advise the Secretary of State for Education and Science. Later, it provided advice to educators on implementing the National Curriculum, conducted curriculum research and development projects, reviewed the curriculum, and forged links within the educational community. The School Examinations and Assessment Council (SEAC), an agency governed by a fifteen-member council, was established to review all aspects of examinations and assessment through its committees, and advise the Secretary of State for Education and Science. Later, it conducted research and development activities relating to examinations and assessment, published and disseminated information, and moderated assessments with appropriate bodies.

5.1.3 National Curriculum

5.1.3.1 Development and Implementation

The Education Reform Act required all public schools in England and Wales to apply a basic curriculum consisting of religious education, and the National Curriculum for the primary and secondary levels (Department of Education and Science, 1989). The National Curriculum categorised compulsory education into four key stages: key stage 1 covering grades 1 and 2; key stage 2 covering grades 3, 4, 5 and 6; key stage 3 covering grades 7, 8 and 9; and key stage 4 covering grades 10 and 11. It embodied a set of foundation subjects consisting of two groups. These were the core subjects of Mathematics, Science, English, and Welsh in Welsh-speaking schools in Wales, and the other foundation subjects of Technology, History, Geography, Art, Music, Physical Education, Modern Foreign Languages, and Welsh in non-Welsh-speaking schools in Wales. Subsequently, Technology was divided into Design and Technology and Information Technology, the latter being renamed later, Information and Communication Technology. Each foundation subject incorporated three elements. Programs of study presented the content and processes of each subject area. Attainment targets provided the knowledge, skills, and understanding students are expected to have achieved at the end of each key stage. Assessment arrangements involved summative assessments together with continuous assessments by teachers.

In order to specify these elements, Secretary Baker appointed working groups consecutively over a three-year period from July 1987 to July 1990 in each of the foundation subjects. Graham (1993), the first chairman and chief executive of NCC, reported on the

outcomes of this process. Factionalism within the Mathematics working group led to intervention by officials from the Department of Education and Science in the interest of finalising the report. The Science working group produced a report without notable dissension. Debates within the English working group over the teaching of grammar, the selection of children's literature and the importance of reading, writing and spelling led to confrontation with Secretary Baker, a view confirmed by Cox (1991). The Technology working group was required to define a new subject area consisting of the unrelated components of design and technology, and information technology. The Modern Foreign Languages working group modified Secretary Baker's proposed guidelines for students to select foreign languages in a universally accepted way. The History working group faced the need to compromise its conclusions about the importance of interpretation and critical awareness in history with the government's demands for emphasis on factual knowledge. The Geography working group's view of an expansive content was contested by the more restricted scope proposed by NCC. The reports of the working groups on Physical Education, Art, and Music were compromised by low status accorded by policy-makers, and confusion about their subject matter. The working groups presented reports within a year of appointment, recommending attainment targets and programs of study. Secretary Baker then published proposals, which were distributed throughout the educational community. Following consultations with various groups, NCC presented consultation reports to Secretary Baker, who published statutory orders for each subject. A copy of each statutory order was distributed by the Department of Education and Science to every teacher affected.

It was proposed that the attainment targets and programs of study should be introduced progressively for each foundation subject. For Mathematics, Science and English, key stage 1 was to be introduced in 1989, key stage 2 in 1990, key stage 3 in 1989, and key stage 4 in 1992. For Technology, key stages 1, 2 and 3 were to be introduced in 1990, and key stage 4 in 1993. For History and Geography, key stages 1, 2 and 3 were to be introduced in 1991, and key stage 4 in 1994. For Art, Music and Physical Education, key stages 1, 2 and 3 were to be introduced in 1992, and key stage 4 in 1995. For Modern Foreign Languages, key stage 3 was to be introduced in 1992, and key stage 4 in 1995. For Welsh, key stages 1, 2 and 3 were to be introduced in 1990, and key stage 4 in 1992. As the attainment targets and programs of study were introduced, arrangements for assessment were to be implemented, based on advice from SEAC. For Mathematics and Science, key stage 1 was to be introduced in 1992, key stage 2 in 1995, key stage 3 in 1993, and key stage 4 in 1994. For English, key stage 1 was to be introduced in 1992, key stage 2 in 1995, and key stages 3 and 4 in 1994. For Technology, key stage 1 was to be introduced in 1993, key stage 2 in 1995, key stage 3 in 1994, and key stage 4 in 1995. For History and Geography, key stage 1 was to be introduced in 1994, key stage 2 in 1996, key stage 3 in 1995, and key stage 4 in 1996. For

Art, Music and Physical Education, key stage 1 was to be introduced in 1995, key stage 2 in 1997, key stage 3 in 1996, and key stage 4 in 1994. For Modern Foreign Languages, key stage 3 was to be introduced in 1996, and key stage 4 in 1997. For Welsh, key stage 1 was to be introduced in 1993, key stage 2 in 1995, and key stages 3 and 4 in 1994. Examinations were to be administered to assess students in each of the foundation subjects at the ages of 7, 11, 14 and 16 years. These arrangements provided for student groups' scores to be published at the end of key stages 2, 3, and 4.

5.1.4 Reorganisation of National Agencies

Following the general election in April 1992, the government formed a separate Department for Education, headed by John Patten, and enacted through the Education (Schools) Act 1992 the incorporation of HMI within the Office for Standards in Education (OFSTED), the new agency responsible for evaluating educational performance. Following his defeat of a leadership challenge brought by John Redwood, the Secretary of State for Wales, in June 1995, Prime Minister John Major reshaped his cabinet, which led to the Department for Education merging with the Department for Employment in July 1995 to form the Department for Education and Employment, headed by Gillian Shephard. Following the general election in June 2001, the Labour government formed a new Department for Education and Skills, headed by Estelle Morris. After the resignation of Estelle Morris over the handling of problems associated with the marking of examinations and criminal records' checks on school employees, Charles Clarke became Secretary of State for Education and Skills in October 2002.

The government amalgamated NCC and SEAC to form the School Curriculum and Assessment Authority (SCAA) through the Education (Schools) Act 1993. An agency governed by a fifteen-member council, SCAA was established in October 1993 to integrate the National Curriculum and its assessment more effectively. In September 1997, SCAA and the National Council for Vocational Qualifications merged to form a new agency, the Qualifications and Curriculum Authority (QCA). Recommended by SCAA's chairman, Sir Ron Dearing, this merger was an outcome of the Review of the 16-19 Qualifications Framework. Subsuming the functions of both its predecessors, QCA was established to ensure that the curriculum and qualifications available to young people and adults were of high quality, coherent, flexible, and contributed to improving the level of attainment in education and training.

5.1.5 First Review

Early in 1993, opposition mounted in the educational community to certain aspects of the National Curriculum. In particular, the length of time required to administer and process the national tests, the impact of testing on reducing teaching time, the increased workloads

experienced by teachers, and the contradictory policy statements of the government heightened public concern. The National Association of Schoolmasters and the Union of Women Teachers brought this opposition to a head by calling teachers to boycott work relating to testing and assessment. The confrontation between the government and the unions over this matter led to litigation in the High Court, the resignation of key officials from NCC and SEAC, and the administration of the national tests at empty examination venues. Criticisms were also reflected in a series of reports published on the implementation of the National Curriculum in primary schools, indicating that over-prescription was leading to curriculum overload and superficial teaching (Alexander et al., 1992; Office for Standards in Education, 1993a; National Curriculum Council, 1993). The opposition became so extensive that the government was forced to initiate a review of the National Curriculum and its assessment, announced by Secretary Patten in an address to the Association of Teachers and Lecturers at Cardiff, Wales, in April 1993.

Conducted by Sir Ron Dearing, the review examined four key issues: the scope for reducing the curriculum; the future of the ten-level scale for assessing student achievement; how to simplify testing arrangements; and how to improve the administration of the National Curriculum and its assessment (Morgan, 1996). Between April and July of 1993, NCC and SEAC surveyed teachers from a random sample of 1,400 schools across England on their views concerning these issues, and convened nine regional conferences at which teachers from 550 of the sampled schools discussed the issues with review panels. Responses to the review were also collected by open invitation from more than 2,300 other schools and individuals. Invitations to 160 organisations and local education authorities led to the submission of 200 responses. The findings of the consultation indicated wide support among teachers for the National Curriculum, but identified concerns in several areas. Key stages 1 and 2 teachers reported the National Curriculum occupied virtually all teaching time, the curriculum orders for Science, Technology, Geography and History were too demanding, and suitable resources were not yet available to support these demands. Many teachers were uncertain about the implementation process. There was particular concern that student achievement needed to be judged against a large number of detailed statements of attainment. Concerns were expressed about the relationship between the national tests and teacher assessment. Teachers of students with special educational needs expressed the view that there was too much content at all stages of the National Curriculum.

In the interim report of the review, Dearing (1993a) examined each of these four issues, concluding that the National Curriculum should be reduced by dividing each subject into an essential core and optional studies, and ensuring the essential core took up less teaching time. The national tests should be limited to the core subjects, moderated teacher

assessments should be given equal weight in reports, and the administration of the National Curriculum should be improved by reducing bureaucracy, raising the quality of documents, and disseminating them more efficiently to schools. The report concluded that the main recommendations on the National Curriculum would take two years to implement. Immediate changes for teachers would come from reduced national tests, slowing down the pace of change, practical advice on handling particular difficulties, and early actions to improve central administration. The report also identified that further investigation should be made into three areas: the future shape of the curriculum for 14- to 16-year-olds; the timetable for reducing the curriculum; and the grading of student achievement by retaining, but improving, the ten-level scale, or replacing it with an alternative.

Following presentation of the interim report in July 1993, the Government announced in the following August that it would retain the existing National Curriculum subjects, but consider greater flexibility in the curriculum for 14- to 16-year-olds, and reduce the curriculum outside the core subjects. Rigorous, but streamlined, national tests would be retained in the core subjects. Administration of the National Curriculum would be improved by removing unnecessary bureaucracy. The existing curriculum would continue during the 1993-94 and 1994-95 school years. A second phase of consultation on these issues was conducted through the autumn of 1993. It involved convening meetings with teachers and principals across England and Wales, and receiving 1,400 written submissions from teachers, schools and other interested groups following advertisements placed in *The Times Educational Supplement*.

In the final report of the review, Dearing (1993b) recommended that the content of the National Curriculum should be reduced for key stages 1, 2 and 3 by identifying a core, thereby freeing 20 percent of teaching time for use at each school's discretion. The National Curriculum should also be reduced at key stage 4 to provide for academic, vocational, and general streams. The approach to grading student achievement should be simplified, and national tests should be continued in the core subjects. Secretary Patten accepted these recommendations immediately after the release of the report in January 1994. Between January and March of 1994, four key stage advisory groups, eleven subject advisory groups, and a steering group, formed by SCAA, revised the programs of study for each of the National Curriculum subjects by taking into account the recommendations of the final report.

Following approval of the revisions by Secretary Patten, draft proposals for the revised curriculum orders were distributed to schools for a two-phase consultation. The first conducted during May 1994 involved dissemination of the proposals to 3,000 key personnel

from schools and other organisations at four conferences held in London, Bristol, Wembley and Leeds. These personnel contributed to the second phase by explaining the proposals to members of the wider educational community. At the same time, 1,200,000 documents were distributed to all schools in England and Wales, and to other organisations. The second phase involved three activities undertaken during June and July of 1994. First, SCAA held more than 120 subject-specific and other conferences with representatives from schools and other organisations. Second, Market and Opinion Research International (MORI) analysed quantitative data from 57,408 respondents in England and 8,124 respondents in Wales. In addition, MORI interviewed four parent and two employer groups on their opinions about the National Curriculum, Gallup polled an area sample of 1,060 adults in England and Wales on their attitudes to the National Curriculum, and a consultant based in York interviewed a group of school governors. The third activity involved a series of meetings between SCAA officials and various interested groups. The organisation and reporting of the consultation were undertaken by a steering group of SCAA officials, who met at first as a group but later with SCAA's full staff to draft and revise the final report.

The report, published by the School Curriculum and Assessment Authority (1994a), indicated that respondents believed the curriculum proposals were an improvement on the existing subject orders, although criticism was raised about a number of general and subject-specific issues. Most respondents believed the proposed curriculum was more manageable, and that planning would be easier. They supported replacing the statements of attainment with level descriptors, and deleting levels 9 and 10 from the ten-level scale for key stages 1, 2 and 3, and linking attainment descriptions for key stage 4 to the General School Certificate of Education (GSCE). However, they were unclear about how end of key stage statements should be reported. On the whole, they believed the programs for Mathematics, Science, Modern Foreign Languages, Art, and Music were appropriate, but specific criticisms were raised about the programs for English, Design and Technology, Information Technology, History, Geography and Physical Education. In response, SCAA undertook further work on the proposals to remove content, excise unnecessary text, and increase the consistency of approach across the subjects. Following agreement about the recommendations on the curriculum, SCAA presented the final report to Secretary Patten in September 1994.

The outcome of the review and consultation was a reduced statutory content for each of the core and other foundation subjects. This led to new statutory orders being distributed to schools in January 1995 for implementation from August 1995 for key stages 1, 2 and 3, and from August 1996 for key stage 4. At the same time, the Conservative Government made a

commitment that no further changes would be made to the National Curriculum for a period of five years.

5.1.6 Second Review

5.1.6.1 School Standards and Framework Act

Following the election of the Labour Government in May 1997, the Secretary of State for Education and Employment, David Blunkett, released a statement in July, intended to establish key policy principles and identify good practice for raising standards, building effective partnerships, and increasing opportunities (Blunkett, 1997). The government convened a series of conferences on excellence in schools across England from which more than 8,000 responses were received to the initiatives presented in the policy statement. As a consequence, the Government revised the initiatives whilst formulating the School Standards and Framework Bill, enacted by parliament in July 1998.

The School Standards and Framework Act incorporated seven parts: measures to raise standards of school education; a new framework for maintained schools; school admissions; other provisions about school education; nursery education; partnership arrangements for Wales; and miscellaneous and general. Measures to raise standards of school education contained four provisions: a limit on infant class sizes; general responsibilities of education authorities; education action zones; and intervention in schools causing concern. The Act required the Secretary of State for Education and Employment to issue a code of practice for school admissions, which came into force from April 1999. The Act required local education authorities to promote high standards by supporting school improvement. Education development plans based on an audit of current performance, targets for individual schools, and a statement of the local education authority's specific priorities for delivering school improvement were implemented over two rounds from 1999 to 2002, and from 2002 to 2007. In October 2000, the government released a policy paper setting out the role of the modern local education authority requiring a more open market for school services, sharing school improvement responsibilities, implementing new ways of discharging responsibilities in partnerships, and complying with proposed national professional standards for school improvement services. The Act created 73 statutory education action zones across England, each consisting of a partnership between schools, parents, a local education authority, a local training and enterprise council, churches, business organisations and voluntary bodies. Launched in March 1999, Excellence in Cities established city learning centres, increased the number of specialist schools, extended opportunities for gifted and talented students, expanded the number of beacon schools for sharing good practice, offered learning mentors, and provided learning support units in all schools within 57 local education authorities. In addition, 102 small education action zones

were established as part of the Excellence in Cities initiative to form zones for local partnerships. The Act instituted measures for intervening in schools causing concern in September 1999. Initially, a school failing to meet specified targets was placed under special measures, and its performance was monitored by OFSTED. Each failing school was 'twinned' with another school with a proven track record to stimulate improvement. If the school failed to turn around within two years, it was closed and replaced by a 'fresh start' school.

5.1.6.2 Curriculum Review

5.1.6.2.1 Monitoring Program

As part of its responsibility to review the implementation of the revised National Curriculum, SCAA developed a three-phase process for collecting information on key issues, a focused study on the key issues, and an evaluation of possible ways forward, which employed four strategies (Colwill, 1996).

First, SCAA conducted the School Sampling Project, a longitudinal study based on an area sample of schools from 88 local education authorities. In 1997 and 1998, 382 primary schools and 372 secondary schools were surveyed about the school curriculum and student performances in assessments.

Second, specific information was collected from 339 schools during visits, 277 seminars and meetings with teachers, questionnaire surveys conducted by the English and Arts teams during 1997, and by tracking curriculum development issues at key stage 4 in a group of 40 schools. In addition, SCAA contracted other institutions to conduct five small-scale studies on specific aspects of the school curriculum and its assessment. The University of Bath investigated ways the curriculum was structured in 12 primary schools. The University of Newcastle surveyed a sample of schools to identify whole curriculum developments at key stage 3. ESK Projects undertook a study into the organisation and delivery of the National Curriculum through case studies in 16 small primary schools. In 1996, the Institute of Education in the University of London carried out an analysis of consistency in teacher assessments for core subjects, whilst in 1997 the University of Nottingham undertook a similar analysis for non-core subjects. Following an analysis of recent research on the implementation of the National Curriculum undertaken in 1997, the University of Newcastle (1998) published a bibliography of relevant research studies.

Third, SCAA established a network consisting of more than 60 professional associations, all local education authorities, and organisations representing independent schools, special educational needs and gifted students, parents, governors, employers and publishers from

which responses were obtained on the development of the school curriculum. Furthermore, SCAA worked closely with officials from OFSTED, the Teacher Training Agency (TTA), and the Department for Education and Employment, and consulted national curriculum agencies in Wales, Scotland, Northern Ireland, and the Republic of Ireland.

Fourth, SCAA commissioned the National Foundation for Educational Research (NFER) in May 1996 to undertake a comparative study of curriculum and assessment frameworks in sixteen countries. In addition to Australia, Canada, England, France, Germany, Hungary, Italy, Japan, Republic of Korea, the Netherlands, New Zealand, Singapore, Spain, Sweden, Switzerland, and the United States of America, the Republic of Ireland was added to this group in 2001, and Wales was added in 2002. Intended to provide information about different approaches for organising the curriculum and the basis for interpreting them, the project led to the development of a database of regularly updated information available on a CD-ROM and on NFER's web site. The database presents a national summary for each country, statements verified by national authorities, legislation and other official statements providing an indication of intended arrangements, alternative sources providing information about implementation, and thematic studies bringing together the findings. Thematic studies are comparative education reports, which combine cross-national factual information on a specific topic collated from the database with analysis, additional research and practitioner opinions, usually gathered at invitational seminars.

5.1.6.2.2 Citizenship Education

In November 1997, Secretary Blunkett formed the fifteen-member Advisory Group on Education for Citizenship and the Teaching of Democracy in Schools to provide advice on effective education for citizenship in schools. After producing an initial report in March 1998 presenting essential recommendations on education for citizenship, the Advisory Group on Education for Citizenship and the Teaching of Democracy in Schools (1998) recommended in its final report that citizenship education should become a statutory entitlement in the curriculum. The Advisory Group recommended that all schools should ensure citizenship and democracy are taught through a framework of learning outcomes taking up five percent of classroom time to be phased in over several years beginning in 2000. Although the learning outcomes should cover the years of compulsory education with only basic learning outcomes being required at key stages 1 and 2, citizenship education should continue for students involved in post-compulsory education.

The Citizenship Education Working Party, consisting of representatives from QCA, TTA, OFSTED and citizenship groups, was appointed to devise a support package for schools. As an initial step, NFER was commissioned to identify resources for citizenship education currently available or under preparation. Between December 1999 and May 2000, 60

organisations and individuals involved in citizenship education and resource production were surveyed, libraries visited, databases and web sites accessed, and resources at conferences and exhibitions identified. Over 300 resources, evenly distributed across the primary and secondary levels, were identified. The respondents to the survey, however, indicated there was a lack of resources providing an explanation of the aims and purposes underpinning citizenship education, and the coverage of certain topics and skills was poor. Three recommendations arose from the findings of the survey. First, the level of awareness about developments in citizenship education needed to be raised. Second, the inventory of resources should be updated regularly, and provided to teachers in an electronic format. Third, the findings of the survey should be disseminated widely.

As a consequence, the Department for Education and Employment developed a web site containing information and resources on citizenship for teachers, parents and governors, and students, including a searchable database of reviews on professional and curriculum resources. Furthermore, the Department for Education and Employment contracted the Citizenship Foundation, the Institute for Citizenship, the Council for Education in World Citizenship, the Schools Councils UK, and the Hansard Society to develop resources for citizenship education. In November 2000, these organisations formed the Association for Citizenship Teaching with the aim of furthering mutual support, knowledge and good practice, skills and resources for teaching and learning in citizenship.

5.1.6.2.3 Personal, Social and Health Education

In May 1998, the National Advisory Group on Personal, Social and Health Education, consisting of health professionals and educators, was formed to develop a national framework for Personal, Social and Health Education in schools by taking into account initiatives on drugs and teenage pregnancies. In defining the aims and purposes of personal, social and health education, the National Advisory Group on Personal, Social and Health Education (1999) recommended that good personal, social and health education is important for students to develop the skills to make informed, healthy and responsible decisions about their lives.

With the inclusion of non-statutory guidelines for Personal, Social and Health Education in the National Curriculum, the Department for Education and Skills developed a web site containing information on resources, training, professional development and support for Personal, Social and Health Education. The web site includes a searchable database of case studies, curriculum materials, guidance documents, and lesson plans.

5.1.6.3 Second Revision

In January 1998, Secretary Blunkett announced that the requirements for implementing the National Curriculum at the primary level would be relaxed. For a period of two years from September 1998, primary schools were not required to teach the existing programs of study for Design and Technology, History, Geography, Music, Art, and Physical Education in order to allow them to concentrate on raising literacy and numeracy skills. From the analysis of 8,000 responses to a questionnaire survey administered in all schools, local education authorities, professional associations and other educational organisations in March 1998, Social and Market Strategic Research reported that more than 90 percent of the respondents agreed with this proposal. Subsequently, the Qualifications and Curriculum Authority (1998a) issued guidelines for schools to take advantage of this flexibility in three ways. First, some aspects of the programs of study could be taught in more detail than other aspects. Second, parts of different programs of study could be combined. Third, certain aspects could be selected from particular programs of study.

As a consequence of the monitoring program, QCA was able to respond to a request made in January 1998 by the Minister for School Standards, Estelle Morris. It directed that advice on the nature and scope of a longer-term review of the National Curriculum should focus on the requirement for a broad and balanced curriculum, greater flexibility and reduced prescription, greater emphasis on the basics of literacy and numeracy, and the creation of a new agenda. In its advice to Secretary Blunkett, the Qualifications and Curriculum Authority (1998b) recommended that the review should concentrate on six areas, together with consideration of specific issues relating to key stage 4 and children aged 3 to 5 years. From consultations conducted in November 1997 on the aims and priorities for the school curriculum, QCA found from responses received from 3,022 schools that a substantial majority stressed the need for breadth and balance at each key stage. As a first step in the review, QCA recommended that an overall rationale statement, together with specific aims and priorities for each key stage, should be developed. In order to support the National Literacy and Numeracy Strategies, QCA recommended that careful consideration should be given to the scope of any changes to the statutory orders for English and Mathematics. In response to the work of the government's advisory groups, QCA recommended that their recommendations should be considered in determining the nature and level of citizenship, personal, social and health education, and spiritual, moral, social and cultural development in the National Curriculum. QCA supported the need for the National Curriculum to provide a common entitlement for all students by providing greater flexibility for access and participation by students with special educational needs, gifts and talents, and those from ethnic minorities. As the monitoring program had identified that major concerns remained with the eight-level scale in spite of attainment targets for most subjects being consistent with teachers' expectations, QCA indicated that it would apply a more consistent, coherent and simpler way of setting these standards when the statutory orders

were revised. Since the strongest message emerging from QCA's monitoring program concerned the inflexibility and overprescription of subject orders, particularly at key stages 1 and 2, QCA recommended that priority should be given to developing less prescriptive orders for the six foundation subjects at key stages 1 and 2. In spite of the more flexible requirements for key stage 4 in the revised National Curriculum, evidence from the monitoring program indicated that concerns persisted in five areas. Therefore, attention should be given at key stage 4 to changing student needs, its role in developing literacy and numeracy, the importance of wider key skills, the need to incorporate strategies to raise student achievement, and the need for a coherent qualifications framework. Following SCAA's development in 1996 of desirable learning outcomes for five-year-old children at the entry point to compulsory education, QCA proposed undertaking a consultation during the summer of 1998 leading to a revision of the desirable learning outcomes in September 1998.

QCA believed a limited revision of the National Curriculum, and the development of materials to support the implementation of changes from September 2000, should be guided by four recommendations. First, a document presenting a rationale statement for the school curriculum should be developed to guide QCA's work in developing the National Curriculum. Second, less prescriptive statutory orders should be developed for some subjects at key stages 1 and 2. Third, the changes to the statutory orders for English and Mathematics at key stages 1 and 2 should be minimal, but aligned to the requirements of the National Literacy and Numeracy Strategies. Fourth, the proposals of the advisory groups on citizenship, and personal, social and health education should be subjected to widespread consultation.

In accepting these recommendations, Secretary Blunkett authorised QCA to commence work on revising the National Curriculum in May 1998. During the preparatory stage between May and August of 1998, QCA held invitational seminars to discuss the recommendations, and consulted the educational community on the initial report of the Advisory Group on Education for Citizenship and the Teaching of Democracy in Schools at a series of regional conferences. Between September and December of 1998, QCA undertook four activities to develop proposals for changing the National Curriculum. A discussion paper on the aims and priorities for the school curriculum was published. Schools were evaluated on how they were using the more flexible curriculum arrangements introduced for key stages 1, 2 and 4. Revised subject orders that clarified the links between literacy, numeracy, information technology and key skills were developed. The Group on Preparation for Adult Life was formed to consider the implications of the work of the national advisory groups for the National Curriculum. Commencing in January 1999, QCA distributed the draft proposals and invited comments from a wide range of interested

groups. Following their revision, the recommended proposals for the National Curriculum and on the preparation for adult life were presented to Secretary Blunkett. Following release of Secretary Blunkett's proposals in May 1999, QCA sent them to a representative sample of schools and other organisations for a two-month review concluding in July 1999. The responses from the review were analysed by MORI, which also organised focus groups with a range of interested parties. Following revision, Secretary Blunkett approved the proposals in September 1999. Copies of the revised National Curriculum, presented as separate handbooks for primary and secondary teachers, were distributed to schools across England in November 1999.

5.1.6.4 Statutory Orders

The National Curriculum published by the Department for Education and Employment and the Qualifications and Curriculum Authority (1999) consists of five parts. First, a statement on values, aims and purposes is explicated. Second, an overview of the National Curriculum and other requirements is outlined. Third, the programs of study are described. Fourth, a set of non-statutory guidelines is described. Fifth, the attainment targets are specified.

The statement on values, aims and purposes declares that the school curriculum and the National Curriculum, which forms an important element, are underpinned by a broad set of common values. These are manifested in two aims; a belief in education as a route to providing opportunities for all students to learn and achieve, as well as promoting their spiritual, moral, social, cultural, physical and mental development. These two aims are reflected in legislation requiring the Secretary of State for Education and Employment to provide a National Curriculum to accomplish four purposes: establish an entitlement to a number of areas of learning; establish standards for student performance; promote continuity and coherence for progression through all levels of education; and promote public understanding of educational issues.

The overview of the National Curriculum and other requirements specifies that the programs of study for all subjects, except Citizenship, at key stages 1, 2 and 3, as well as at key stage 4 for English, and Information and Communication Technology were implemented from August 2000. Implementation of Mathematics, Science, Design and Technology, Modern Foreign Languages and Physical Education at key stage 4 occurred from August 2001. Citizenship was implemented at key stages 3 and 4 from August 2002. Although parents may withdraw their children, schools are required to teach religious education according to a locally agreed syllabus, sex education, and careers education at the secondary level. Other aspects of learning across the National Curriculum are the promotion of spiritual, moral, social and cultural development, personal, social and health

education, key skills and thinking skills, financial capability, enterprise and entrepreneurial skills, work-related learning, and education for sustainable development. From September 2000, a foundation stage covering children's education from three years of age to reception was incorporated setting out early learning goals across six areas of learning: personal, social and emotional development; language and literacy; mathematical development; knowledge and understanding of the world; physical development; and creative development. Primary schools are also required to implement frameworks for literacy and numeracy developed as part of the National Literacy and Numeracy Strategies.

A statement on general teaching requirements precedes the statements on the teaching requirements for each subject's program of study. Providing effective learning opportunities for all students should be accomplished by setting suitable learning challenges, responding to students' diverse learning needs, and overcoming potential barriers to learning and assessment for individuals and groups of students. Students should use Standard English, apply and develop their capabilities in information and communication technology, and recognise health and safety requirements for practical activities in all subjects.

English is organised into three programs each consisting of three sections: speaking and listening; reading; and writing. At key stage 1, students learn to speak clearly and listen to what others have to say, read confidently and independently, and enjoy writing and see value in it. At key stage 2, students learn to speak in a range of contexts, read a range of materials and respond to different layers of meaning in them, and develop an understanding that writing is essential by learning its rules and connections and use the planning, drafting and editing process. At key stages 3 and 4, students learn to speak and listen confidently in a wide range of contexts, read a wide range of texts independently and appreciate what they read at a critical level, and develop confidence in writing for a range of purposes using different formats and layouts. At key stage 1, teachers should use stories, poems, plays, print and computer-based information texts, dictionaries and encyclopedias to develop reading skills. At key stage 2, teachers should use stories, poetry, diaries, playscripts, biographies, print and computer-based reference and information texts, and newspapers. At key stages 3 and 4, teachers should use plays, novels, short stories and poetry from the English literary heritage. These should include two plays by William Shakespeare, drama by other major playwrights, two works of fiction by major writers published before 1914, two works of fiction by major writers published after 1914, poems by four poets published before 1914, and poems by four poets published after 1914. In addition, contemporary drama, fiction and poetry, as well as texts from other cultures, literary non-fiction texts, computer-based and printed reference materials, and media and moving image texts should be used.

Mathematics is organised into four programs. The key stage 1 program consists of two sections: number; and shape, space and measures. Students learn to count numbers and develop calculation skills in different settings, and learn about shape and space through practical activities within their immediate environment. The key stage 2 program consists of three sections: number; shape, space and measures; and handling data. Students learn to calculate numbers using patterns, sequences, integers, fractions, percentages, ratio and decimals, explore features of shape and space and develop measuring skills, and present their methods and reasoning using a wide range of mathematical language. The key stage 3 program consists of three sections: number and algebra; shape, space and measures; and handling data. Students extend their calculating skills to understand the importance of proportional reasoning and begin using algebraic techniques and symbols, use definitions and reasoning to understand geometrical objects, and study handling data through practical activities. Comprising separate foundation and higher courses, the key stage 4 program consists of three sections: number and algebra; shape, space and measures; and handling data. Students use proportional reasoning and develop skills of algebraic manipulation, describe and understand geometric figures and the logical relationships between them, and learn to handle data through practical activities using information and communication technology. In key stage 1, teachers should use a variety of resources and materials, including information and communication technology. In key stage 2, teachers should use a wide variety of resources and materials, including calculators, and information and communication technology. In key stages 3 and 4, teachers should use a wide variety of materials, calculators, and computer programs including spreadsheets, databases, geometry or graphics packages.

Science is organised into five programs each consisting of four sections: scientific inquiry; life processes and living things; materials and their properties; and physical processes. At key stage 1, students observe, explore and ask questions about living things, materials and physical processes by collecting and evaluating evidence. At key stage 2, students learn about a wider range of living things, materials and physical processes, explore phenomena using simple models and theories, question positive and negative effects of scientific developments, and conduct systematic investigations. At key stage 3, students build on scientific knowledge and understanding and make connections between different areas of science, use scientific ideas and models to explain phenomena, consider positive and negative effects of scientific developments on the environment, and undertake quantitative work. The key stage 4 programs for Single Science and Double Science cover similar subject matter at varying depths. Students learn about a wide range of scientific ideas, explore how technological advances relate to scientific ideas, consider the power and limitations of science in addressing industrial, ethical and environmental issues, use a

range of approaches to carry out investigations, and examine how scientists develop new ideas and theories. Each program requires teachers to use a variety of sources of information, including information and communication technology-based sources.

Design and Technology is organised into four programs each consisting of a single section. At key stage 1, students consider ideas for designing objects through early experiences, explore how familiar objects work, and learn how to design objects easily. At key stage 2, students work independently or in teams on a range of activities, consider the uses of products, propose improvements in designs, and draw on knowledge and understanding from other areas. At key stage 3, students work out their own ideas independently taking into account the uses of products, develop an understanding of design by investigating the work of professional designers, use computers as an integral part of design, and draw on knowledge from other areas of the curriculum. At key stage 4, students work independently on projects linked to their own interests, industrial practice and the community, including an enterprise activity, use computers for research, consider how technology affects society, and learn about the advantages and disadvantages of new technologies. In key stages 1 and 2, students should use computers in a range of ways. In key stages 3 and 4, students should use information and communication technology, including computer-aided design and manufacture software and control programs.

Information Technology is organised into four programs each consisting of a single section. At key stage 1, students learn to use information and communication technology to develop their ideas, and record their creative work. At key stage 2, students use a wider range of information and communication technology tools to develop their research skills, decide what information is appropriate for its audience, and question the plausibility and quality of information. At key stage 3, students learn to use information and communication technology tools and information sources independently in other subjects, consider the quality and reliability of information, and become more focused, efficient and rigorous in their use of information and communication technology. At key stage 4, students become more responsible for choosing information and communication technology tools and information sources to suit particular needs, and work with others to carry out and evaluate their work.

History is organised into three programs each consisting of a single section. At key stage 1, students learn about everyday life in contemporary society, everyday life in a community from the distant past, famous personalities, and significant past events from the history of Britain and the wider world. At key stage 2, students use different sources of information to represent and interpret events, people and places, and change and continuity across various perspectives. The scope covers six units: a local history study; Romans, Anglo-

Saxons and Vikings in Britain; Britain and the wider world in Tudor times; Victorian Britain, or Britain since 1930; the culture and legacy of ancient Greece; and key features of an ancient civilisation. The key features of one civilisation from Egypt, Sumer, Assyria, Indus Valley, the Maya, Benin, or the Aztecs are studied. At key stage 3, students make connections between events and change, compare the structure of societies, and analyse the past to represent and interpret events. The scope covers six units. First, a study of major features occurring in medieval Britain from 1066 to 1500. Second, a study of the political, social and religious changes arising during the formation of the United Kingdom from 1500 to 1750. Third, a study of how the United Kingdom was affected by the expansion of trade and colonisation, industrialisation and political changes from 1750 to 1900. Fourth, a study focused on an era or event in the pre-history or history of Europe before 1914. Fifth, a study of the cultures, beliefs, and achievements arising in a past Asian, African, American or Australasian society. Sixth, a study of the impact of individuals, events and social changes affecting Britain, Europe and the wider world after 1900. In key stage 1, teachers should use stories, pictures and photographs, written documents, television programs, plays and songs. In key stage 2, teachers should use documents, printed sources, CD-ROMs, databases, pictures and photographs. In key stage 3, teachers should use a range of sources for information, including documents, printed sources, pictures and photographs, films and information and communication technology-based sources.

Geography is organised into three programs each consisting of a single section. At key stage 1, students investigate geographical factors affecting the local community and another locality in the United Kingdom or overseas that has physical and human features contrasting with those in the local community. At key stage 2, students learn about the effects of water on landscapes, patterns of settlement and environmental issues affecting a locality in the United Kingdom, and a locality in a country that is less economically developed. At key stage 3, students learn about the effects of tectonic and geomorphological processes, weather and climate, ecosystems, population distribution, settlement patterns, economic activity, developmental differences, environmental and resource issues affecting two countries in significantly different states of economic development. In key stage 1, teachers should use maps, pictures, photographs, books, videos and CD-ROMs. In key stage 2, teachers should use maps, atlases, pictures, photographs, television and radio programs, books, newspapers, and information and communication technology. In key stage 3, teachers should use a wide range of materials including maps, atlases, and information and communication technology.

Modern Foreign Languages consist of non-statutory guidelines for key stage 2 and a single program at key stages 3 and 4, consisting of a single section. This program is designed for studying one or more official working languages of the European Union (Danish, Dutch,

Finnish, French, German, Greek, Italian, Portuguese, Spanish and Swedish), and any other modern foreign language, offered alongside the possibility of studying an official working language of the European Union. At key stage 2, students begin to acquire knowledge and understanding of the target language, and learn about other countries and cultures. At key stages 3 and 4, students acquire knowledge and understanding of the target language, develop language skills, language learning skills and cultural awareness. The program for key stages 3 and 4 requires teachers to use written texts and information and communication technology-based sources to acquire knowledge and understanding of the target language, dictionaries and reference materials to develop language skills, and authentic materials and information and communication technology-based sources to develop cultural awareness.

Art and Design is organised into three programs each consisting of a single section. At key stage 1, students explore and develop ideas, investigate a range of materials and processes, and learn about the role of art, craft and design in their environment. At key stage 2, students develop creativity and imagination through more complex activities, increase their critical awareness of the roles and purposes of art, and design, and become more adept in using materials and processes. At key stage 3, students develop their creativity and imagination through more sustained activities, engage with different styles of art, craft and design in the contemporary world and from different times and cultures, and use visual language to convey ideas, feelings and meanings.

Music is organised into three programs each consisting of a single section. At key stage 1, students listen and respond to a wide range of music, play musical instruments and sing songs from memory, and create short compositions. At key stage 2, students sing songs in unison and play instruments with increasing awareness of their own contribution to a group performance, improvise their own musical compositions in response to various stimuli, and respond to a variety of music from different times and cultures. At key stage 3, students perform and compose music in different styles, work individually and in groups to become aware of different roles and contributions, explore specific genres, styles and traditions from different times and cultures with increasing ability to make connections between different areas of knowledge.

Physical Education is organised into four programs each consisting of a single section. At key stage 1, students develop skills in movement and coordination in dance and gymnastics, and play competitive games in small groups. At key stage 2, students use skills in different ways linking them to make actions, phrases and sequences of movement, compete with others, and develop an understanding of how to succeed and evaluate success in five areas of activity. These include three mandatory areas of activity: dance;

games; and gymnastics. They also include two of three optional areas of activity: swimming and water safety; athletics; or out-door and adventurous experiences. At key stage 3, students develop an understanding of what makes a performance effective and how to apply these principles, learn to initiate and make decisions about improving performance, and take a variety of roles in four areas of activity. These include one mandatory area of activity, games, and one area of activity from dance or gymnastics. They also include two of three optional areas of activity: swimming and water safety; athletics; or out-door and adventurous experiences. At key stage 4, students decide on the areas of activity in which to be involved, the roles that suit them best, and extend their involvement in exercise and activity out of school in two of the six areas of activity. These are dance, games, gymnastics, swimming and water safety, athletics, or out-door and adventurous experiences.

Citizenship is organised into two programs each consisting of one section. At key stage 3, students learn about the legal, political, religious, social and economic rights underpinning society that influence their lives and communities, and develop an appreciation of fairness, social justice, respect for democracy and diversity through taking part in community activities. At key stage 4, students learn about the legal, political, religious, social and economic institutions and systems that influence their lives and communities, and develop knowledge, skills and understanding about fairness, social justice, respect for democracy and diversity through taking part in community activities.

Non-statutory guidelines for Personal, Social and Health Education and Citizenship at key stages 1 and 2, and Personal, Social and Health Education at key stages 3 and 4 each consist of a single section. At key stage 1, students develop an understanding of ethics, participate as active members of their peer group, develop basic skills for keeping healthy and safe, and begin to develop positive relationships with other people. At key stage 2, students develop responsibility for their actions and towards others, gain an understanding of social and political factors affecting the citizen's role, make informed choices about their health, and develop good relationships with others by respecting differences between people. At key stage 3, students learn to take responsibility for making decisions about all aspects of their lives, recognise risks to a healthy life-style posed by illicit drugs and sexual activity, and understand the importance of relationships with different people. At key stage 4, students develop self-awareness and confidence needed for further learning, work and adulthood, balance alternative courses of action for a healthy lifestyle, and consider the consequences of their actions in different relationships with peers and adults.

5.1.7 Role of Materials

5.1.7.1 Contextual Background

The implementation of the National Curriculum progressively from 1989 led to many of the available resources becoming obsolete. As each new foundation subject was implemented, publishers released new materials to fill the void created by the obsolescence of the available materials. When History was introduced in September 1991, for instance, new materials appeared on the market at the same time. This situation arose because of the compressed time frame employed to implement the History order. NCC published the consultation report in December 1990, followed by the draft order in January 1991, the final order in March 1991, and non-statutory guidance in April 1991. Furthermore, the lack of dialogue between NCC, SEAC, and publishers about interpretation of the statutory order and non-statutory guidance amplified the problems for authors and publishers arising from the succinct time frame. As Lambert and Butt (1996) argued, the market domination, frequently held by the first geography textbooks appearing in the marketplace after the implementation of the National Curriculum, was due to 'network externability' by which a product sold to an ever-increasing share of the market because it became known.

The shortened phase for developing new materials also affected their quality and content. Sheldrick (1991) found that many science textbooks were characterised by eight limitations. The rationale for science education was not clarified. There was a tendency to ignore students' interests. Problem-solving activities were not included. There was a lack of attention to the affective domain. The representation of minorities was symbolic. There was a failure to encourage a cross-curricular approach. Subject matter for talented students was not differentiated. The presentation of assessment techniques was inadequate. MacLure and Elliott (1993) contended that whilst the content of teacher's guides often presented progressive values in appealing to teacher professionalism, the content of new materials intended for students was more likely to present traditional values in bringing the subject matter into line with the National Curriculum.

On the other hand, Belben and Jones (1994) reported that the publication of new materials to support implementation of the History order was characterised by the application of innovative features as well as the preservation of some notable shortcomings. The new materials employed sophisticated designs, often in colour. They were written and published by established as well as new authors and publishers over a shortened developmental process of four or five months using desktop publishing facilities. They were marketed using more competitive approaches, such as sophisticated promotional materials, direct selling between publishers and schools, and discounted prices. The content of the new materials also accelerated new trends in subject matter content, such as encyclopedic coverage, and structured sections of narrative, activities and questions. The opportunities offered to publishers through the implementation of the History order were

also tempered by constraints. The government's short time frame for implementing the National Curriculum was reflected by the lack of reliable information on programs of study, increased budgets required for publishing and competition in the market, and the drastically reduced process imposed on publishers to develop new materials. As a consequence, the purchase of new materials often reflected the effectiveness of marketing strategies used by publishers, rather than sound decision-making in selecting the most appropriate from newly available materials. Furthermore, this development increased the reliance of many teachers on photocopying extracts from published materials for inclusion in worksheets, a practice criticised by OFSTED as leading to poor quality in teacher-produced materials.

5.1.7.2 Evaluation Projects

5.1.7.2.1 History Materials

NCC commissioned a six-member panel of academic historians and educational consultants to evaluate a sample of multimedia materials for History published between 1991 and 1993. They covered four topics: Invaders and Settlers, and Ancient Greece at key stage 2; and Medieval Realms, and The Making of the United Kingdom at key stage 3. The School Curriculum and Assessment Authority (1994b) reported that the panel found publishers chose to produce more innovative designs in materials for key stage 2, since History had been neglected for many years at the primary level. On the other hand, those materials produced for key stage 3 were more conventional, often being modelled on available textbooks. Although the content of most materials was generally accurate, factual errors and lack of reference to the findings of recent scholarship were common. The treatment of British history was Anglo-centric, with limited attention given to the histories of Wales, Scotland and Ireland. The reading levels of materials for key stage 2 were lacking in challenge, although the reading levels of those materials for key stage 3 were more appropriate. Furthermore, many of the new materials failed to present sufficiently extended or detailed narrative accounts of historical events. Generally, visual sources were well represented in the new materials, but written sources were lacking and inadequate. The materials also provided inadequate background information about cited sources. The provision of background information about visual sources was more variable, ranging from detailed for some key stage 2 materials to inadequate for some key stage 3 materials. The use of illustrations, maps and cartoons was sometimes inappropriate, and often contained factual errors.

An important feature of the new materials was an endeavour on the part of publishers, particularly of those materials for key stage 2, to provide teachers with specific teaching approaches for the subject area. The range of perspectives presented in materials designed

for key stage 2 was comprehensive but superficial, whilst those materials designed for key stage 3 covered only political, economic, social, technological and scientific perspectives well with the coverage of cultural and aesthetic perspectives being inadequate. Coverage of social, cultural, religious and ethnic diversity in most of the materials was inadequate. On the other hand, the treatment of gender was generally representative. The coverage of terms, prescribed in the History order for describing historical events or trends, was inconsistent. The scope and sequence of content coverage were more appropriate in materials designed for key stage 2 than for key stage 3. Content coverage in focus statements was better for materials designed for key stage 2 than key stage 3. The materials designed for both key stages presented suitable activities for students of general ability, but these were intended to create interest in a topic rather than provide rigorous intellectual stimulation. One approach used by authors to overcome excessive narrative and undemanding activities was presenting key questions as a focus for more substantial investigation. The inclusion and quality of indexes, necessary aids for student research, were more commonly encountered and of better quality in materials designed for key stage 2 than key stage 3.

Whilst some materials provided useful advice on assessment issues, teachers' guides sometimes failed to stress the link between attainment targets and the programs of study. Generally, authors focused assessment activities into a narrow band of level statements, thereby limiting their range. Few materials offered students regular opportunities to reflect on appropriate interpretations of historical events, personalities and developments. Activities were often shaped by the detailed wording of statements of attainment, although authors varied in their approaches, some targeting individual statements whilst others combined questions based on individual statements with groups of statements. Model answers were provided in a small number of materials to exemplify performance at different levels.

The report concluded that implementation of the History order stimulated the rapid publication of a diverse range of new materials of variable quality. It was anticipated, however, that the demands of the revised National Curriculum of 1995 were likely to place new challenges on authors and publishers to apply the findings and recommendations of this study to improve the next generation of new materials.

5.1.7.2.2 Educational Resources Project

This evidence led SCAA to fund the Educational Resources Project over three years to evaluate available resources for the foundation subjects. SCAA instituted a schedule of three rounds to ensure that materials were analysed in each foundation subject before any review of the relevant subject. Mathematics, Science, Geography, and Art were to be

evaluated during 1996 and 1997. English, Modern Foreign Languages, and Music were to be evaluated during 1997 and 1998. Design and Technology, Information Technology, History, and Physical Education were to be evaluated during 1998 and 1999. Although the evaluations of materials for Mathematics, Science, Geography, Art, English, Music and Physical Education were completed with these funds, work on evaluating materials for Modern Foreign Languages and History was not completed because of budgetary restraints. Work on evaluating materials for Design and Technology and Information Technology was not undertaken, because activities covering similar aspects conducted by the Design and Technology Association and the British Educational Communications and Technology Agency duplicated this work.

5.1.7.2.2.1 First Educational Resources Seminar

The first round was preceded by a seminar convened by SCAA in November 1996. At this seminar, publishers, teachers, consultants, researchers, and representatives from television networks, the Curriculum and Assessment Authority for Wales, OFSTED, the British Educational Communications and Technology Agency, and the Netherlands Institute for Curriculum Development discussed furthering collaboration between publishers and education agencies. A comparative analysis of the means for producing, selecting and distributing textbooks across fifteen countries, presented by NFER, identified important variations between countries concerning these aspects (Le Metais, 1996). Discussions at the seminar focused on four main questions. Whether SCAA should work with publishers to improve the quality of materials? How should teachers' expertise in using materials be developed more effectively? How should materials of print, audiovisual, video and computer-based media be integrated? How should shortages of materials in many schools in England be addressed? The participants agreed on seven key recommendations. Collaboration between education agencies and publishers should be improved. Teachers should be provided with information about available materials. Sound selection procedures should be developed. Research should be conducted on how teachers use materials. Training and time should be provided on how to use materials. Research should be conducted on the extent to which textbooks could be used to support subject expertise in primary schools as a means of countering a rising anti-textbook culture. Policy-makers should be alerted to how the provision of materials will be affected by delegation of budgeting to schools.

5.1.7.2.2.2 First Round

In 1996, a group of SCAA officials applied the approach used to evaluate the History materials to design the first round as a pilot study to test the appropriateness of both the methodology and the schedule. Two distinct methods were applied in the pilot study consisting of four projects. In one method, consultants used evaluation instruments to

analyse samples of materials for Mathematics, Science and Geography. In the other method, a questionnaire survey was administered in a sample of eight local education authorities to identify the availability of materials for Art. The main purpose of these projects was to determine the range of available materials, assess the goodness of fit between the National Curriculum and samples of materials, and promote discussions of the findings with publishers. An Overview Group of representatives from SCAA, the Curriculum and Assessment Authority for Wales, the British Educational Communications and Technology Agency, television networks, and publishers oversaw work on these four projects. In addition, a group of publishers, teachers, consultants from information technology and higher education, OFSTED, and local education authorities was formed to offer advice about the role of materials.

The evaluations of Geography and Science materials were the first of the four subjects to be initiated. In March 1996, steering groups of teachers, curriculum specialists, personnel from institutions of higher education, and representatives from the Curriculum and Assessment Authority for Wales and OFSTED were appointed to oversee each project, develop criteria for evaluation instruments, and identify the samples of materials to be evaluated. At the same time, a group of five evaluators was commissioned for the Geography project and a group of six evaluators was commissioned for the Science project. Key stage 3 was determined as the focus level for both projects. A sample of eight multimedia materials was selected for evaluation in the Geography project and two samples of three multimedia materials in the first phase and six multimedia materials in the second phase were selected for evaluation in the Science project. Initially, each evaluator in both projects examined a single material in order to validate the evaluation instrument. The evaluation instrument for the Geography project consisted of three main parts: Nature of Resources; Match to the National Curriculum Geography Order; and Fitness for Purpose. Separate evaluation instruments were used in the two phases of the Science project. For the first, it consisted of five main parts: Range and Nature of the Scheme; Match to the National Curriculum Key Stage 3 Science Order; Fitness for Purpose; Use of Materials within the Classroom; and Outcomes of the Analysis. For the second, it consisted of a checklist concluding with a part titled Outcomes of the Analysis. Each of the evaluators applied the appropriate instrument to evaluate two or three Geography materials, or three materials in the first phase and two materials in the second phase of the Science project from the samples independently, before meeting as groups to reach a consensus about each analysis. A draft report on each material, reflecting the consensus was written, and reviewed by both the publishers and the steering groups. Final reports were produced from the draft reports, and used to disseminate the findings to publishers and editors at a conference held in March 1997.

The School Curriculum and Assessment Authority (1997a) reported that Geography materials usually consisted of several student components, each accompanied by a teacher's guide. Four of the materials had been developed to meet the requirements of the revised National Curriculum order, three to meet the requirements of the 1991 National Curriculum order, and one material predated the National Curriculum. The student components were usually composed of several units. Those Geography materials, consisting of several student components, were organised sequentially by grade levels. The content of accompanying teacher's guides varied widely. The overall quality of the materials was judged to be high, if compared with materials available in the past or those available from foreign countries. Most materials met the requirements of the Geography order in general terms, although coverage of some aspects, notably places and geographical inquiry, was superficial, with fewer opportunities for branching to meet individual student needs. Skills, places and themes were integrated to varying degrees. The materials provided opportunities for students to develop reading and writing skills, but the treatment of information technology skills was uneven. The materials were targeted at students of average ability working at levels 4 to 6 in key stage 3, rather than less or more able students. A little over half the materials offered general advice on assessment, which was not always linked specifically to the assessment requirements for the National Curriculum. The materials displayed a high degree of factual accuracy, and balanced treatment of gender and ethnicity. However, stereotypical images of development and urban issues were depicted in illustrations rather than in photographs. The production quality and physical design of the materials were generally good, although some materials showed a lack of extended passages of text, small size of photographs, overuse of illustrations, and insufficient use of maps. The reading levels of most materials were appropriate for targeted students. The materials included a wide range of student activities, most of which contributed to learning, although many involved transfer of information rather than higher order skills. Most materials appeared to build on knowledge, skills and understanding developed in key stage 2, but evidence of progression within key stage 3 was more difficult to ascertain, because components within multimedia materials were not designed for specific age groups. Progression within the materials was not linked to progression defined in the National Curriculum level descriptions.

The School Curriculum and Assessment Authority (1997b) reported that the evaluation of Science materials was preceded by content analyses of the fourteen multimedia materials most frequently used in schools in England for key stage 3 Science. Nonconsumable student components were analysed to identify whether practical activities, homework questions, guidance for reporting experiments, revision information, and challenge cards were provided. Consumable student components were analysed to identify whether practical activities, written worksheets, homework worksheets, extension material for more

able students, support material for less able students, guidance for reporting experiments, revision information, and self-assessment sheets were provided. Teacher's guides were analysed to identify whether tables of National Curriculum coverage, topic outlines with program of study references, learning objectives, background scientific information, guidance on assessment, answers to student questions, end-of-topic tests, tables of investigation opportunities, suggested information technology opportunities, equipment lists, and safety issues were provided. It was found that the materials usually covered five aspects. The knowledge and understanding required by the program of study. Opportunities were provided for experimental work compatible with the program of study for Experimental and Investigative Science. Guidance was offered to teachers on formative assessment based on the performance demonstrated by students in classwork and end-of-topic tests. Guidance was offered on the management and assessment of experimental work. Appropriate opportunities were provided for students across the full range of abilities. Whilst all student components contained written texts and questions, most included practical activities, and about half offered supplementary extension or support materials for more able or less able students, few offered guidance for experiments. Most teacher's guides provided a summary showing how the material covered the program of study presented as a table, or related to each topic or lesson in the form of learning objectives, and end-of-topic tests, often with scoring forms, but rarely with assessment guidelines based on descriptions. The teacher's guides for about half the materials provided answers to questions in the student components, and guidance for assessing Experimental and Investigative Science. However, few provided guidance for assessing Living Things and Life Processes, Materials and their Properties, and Physical Processes, and additional scientific information to assist non-specialists, beginning teachers, or science technicians.

The evaluation of the nine Science materials indicated that those written for either the original or the 1995 revised Science orders provided good matches with their respective orders. Although coverage of content in Living Things and Life Processes, Materials and their Properties, and Physical Processes was good, activities provided for Experimental and Investigative Science rarely presented the necessary range of opportunities or guidance. Few materials satisfied the requirements of the introduction to the program of study, or provided opportunities for using information technology and developing language. Although most materials provided assessment advice, few showed how students' performances related to level descriptions. The majority of the materials reflected an appropriate interpretation of National Curriculum standards. The quality and accuracy of scientific content in the materials were good. The presentation of student components was good, showing attractive and well-arranged use of illustrations, division of content into manageable topics, and progression within Living Things and Life Processes, Materials and

their Properties, and Physical Processes. However, this progression was not matched in terms of presentation, suggested teaching approaches, nor appropriate reading levels. Support for science technicians was frequently lacking. The teacher's guides provided a wide range of information, but components appropriate to less or more able students were lacking. Although the materials did not limit flexibility in teaching and learning approaches, those that were highly structured promoted a particular method, and required a greater degree of organisation to be used effectively. Overviews and suggested pathways through topics, and cross-referencing to non-consumable and consumable student components were often presented in highly structured materials. The materials provided a wide range of classroom activities, but homework activities were lacking in some, and open-ended exercises were included infrequently.

The evaluation of Mathematics materials began in September 1996, when the steering group, appointed to oversee the project, met to develop criteria for the evaluation instrument, and identify the sample of materials to be evaluated. At the same time, a group of four evaluators was commissioned, key stage 2 was determined as the focus level for the project, and a sample of four multimedia materials was selected for evaluation. Each evaluator examined two materials by applying the evaluation instrument, consisting of five main parts: Description of the Nature of the Courses Sampled; Coverage and Interpretation of the Revised National Curriculum Mathematics Order; Fitness for Purpose; Comparison with National Assessment and Reporting Requirements; and Use of Materials within the Classroom. The evaluators were asked to concentrate attention on the components of each material targeted at grade 4, and to sample selected components from other parts of the material. A report on each material, reflecting the consensus about each evaluation, was written and distributed to the respective publisher.

The School Curriculum and Assessment Authority (1997c) reported that each Mathematics material consisted of a teacher's guide and several student components, such as textbooks, workbooks, and consumables. The teacher's guides were of good quality, recommending use of concrete materials, and incorporating notions of progression. They varied in their treatments of assessment issues, guidance for curriculum planning, and teaching and learning methods. Their treatments of notational concepts, appropriate contexts for calculating activities, mental methods of calculation, conceptual links between related mathematical topics and cross-curricular links, and the range of assessment procedures were inadequate. Although the physical design of the student components was good, they often failed to present objectives clearly, engage students in reading, offer open-ended activities, and congruence with the respective teacher's guide was lacking. None of the materials met the requirements of the Mathematics order fully or adequately. Only one material met the requirement for delivering the attainment target, Using and Applying

Mathematics, although each of the materials covered aspects successfully for the other three attainment targets: Number and Algebra; Shape, Space and Measures; and Handling Data. Although the balance between these attainment targets changed with progression, none of the materials satisfied the relative balance of assessment weightings. Opportunities for developing students' reading skills, and effectively using calculators and computers were addressed inadequately in the materials. Although the materials addressed assessment issues in a variety of ways, little advice was offered on distinctions between the purposes and procedures of assessment, and relation to level descriptions. Generally, the content of all the materials was found to be accurate in terms of vocabulary, and the production quality and physical design were good. The coverage and treatment of issues such as the range of students' abilities, gender, ethnicity, and cross-curricular links varied considerably between the four materials. Some materials included documentation designed to encourage greater parental involvement.

An alternative method was applied in the Art project, because textbooks were not used in this subject. The project was preceded by a pilot study conducted at Tower Hamlets Local Education Authority in London, in which a questionnaire was trialed and key issues identified. The findings of the pilot study, presented to a group of five Art supervisors and specialists, led this group to survey the range of resources used in schools. A questionnaire was administered in 250 schools, comprising 165 primary schools, 70 secondary schools, and 15 special schools, and 40 teachers were interviewed across eight local education authorities.

The School Curriculum and Assessment Authority (1997d) reported that books, posters and post cards accounted for at least 50 percent of materials used, followed by multimedia materials, although audiovisual and computer-based materials were rarely used. Primary teachers often developed collections of artefacts, whilst secondary teachers frequently photocopied, cut out and laminated illustrations from printed resources. Cost was perceived as the main factor influencing the selection of resources, although the extent of teachers' training, their familiarity with images and artefacts, gender bias, and differing needs and abilities of students were identified as factors in some situations. Local bookshops, museums and art galleries were cited as the main sources for obtaining resources, although local libraries, mail order firms, and publishers visiting schools were other important sources. Traditional topics of art education, such as painting, drawing and visual elements, were catered for best by resources, whilst shortages occurred in non-Western art, sculpture, ceramics, women artists, the role of artists, graphic design, history of design, local artists, and contemporary artists. Books and posters presenting large-scale pictures with information were rated as the most useful. The patterns of use of resources for curriculum planning varied widely, although schools generally planned purchases of

materials. Many schools organised resources by themes, or materials and methods, often using visual resources to provide initial stimulus. Limited funding, however, had led some schools to devise other strategies to plan around the lack of resources.

The findings of the survey, together with information gathered from monitoring implementation of the Art order, led to small groups being formed to investigate the provision of resources in three areas: non-Western art; printed resources; and multimedia materials. Two consultants investigated the availability of materials for non-Western art by adapting the questionnaire to survey Art teachers in two local education authorities, developing case studies of projects on non-Western art undertaken in five schools, and devising a checklist, which teachers applied at a seminar to screen Art materials. The findings of these studies indicated that teachers used a wide variety of resources, including printed resources, artefacts, visits to galleries, and artists in schools. Criteria for selecting resources, ranked in order of importance, were production quality, promotion of positive images, availability, reading level, accuracy, and currency. The group investigating the availability of printed resources surveyed the resources available from the relevant professional association and two bookshops, classifying 114 printed resources for Art education into 11 categories. It was found that 66 percent of these publications supported curriculum implementation, although only 20 percent of this group linked implementation to theory and research. Furthermore, 65 percent of the total resources related to the primary level, whilst only 16 percent related to the secondary level. The group investigating the use of multimedia materials conducted trials and evaluations of two multimedia materials, one designed to support the teaching of lettering in schools, and the other to support the teaching of media in Art at key stage 3. SCAA and the Crafts Council convened a seminar at which Art teachers shared their findings concerning trials of the first material. The second material was evaluated by two consultants, who worked with groups of teachers at pre-service and in-service teacher development settings to consider the potential of the material for supporting the Art order. The findings indicated that both materials matched the Art order, although the reading level was too difficult for key stage 3, and the material for teaching lettering was used in a variety of ways. It was concluded that teachers valued the materials on the basis of nine attributes: physical design and production quality; relevance to targeted student groups; links to the National Curriculum; potential for investigation and practice; continuity; realistic scope for implementation; flexibility for branching; treatment of ethnicity and gender; and cost.

Since it was found from the questionnaire survey that teachers' use of resources for Art referred to particular artists, craftspeople and designers or schools of art, SCAA commissioned the Centre for the Study of the Arts in Primary Education at the University of Plymouth to investigate these findings. Separate forms of a questionnaire, administered

to primary and secondary schools in 42 local education authorities during the summer of 1997, led to 373 primary schools and 248 secondary schools responding to a survey. The Qualifications and Curriculum Authority (1998c) reported that from key stages 1 to 3 over four-fifths of all references favoured the European tradition, and only a minority of artists were frequently represented, because they were perceived as accessible for involving students. The use of cross-curricular themes was important in determining the range of artists studied in primary schools, whilst subject themes and individual student interests were important in secondary schools. Discussing an artist's work as a means to promote students' application to their own work was the most frequently used teaching strategy, although the use of other strategies increased from key stages 1 to 4. The majority of teachers in all key stages reviewed the work of artists to ensure progression from year to year in students' experiences, the balance of references to work from different times and cultures, and how differentiation is achieved in students' responses to works at different stages.

The outcomes of the pilot study led the Overview Group to present six recommendations. First, the Overview Group should continue to meet regularly to discuss ways in which QCA and publishers could collaborate. Such collaboration should focus on improving the quality of materials, procedures used to evaluate materials, ways of disseminating the outcomes of this work to publishers and others, and how other providers of resources may be involved in this work. Second, regular meetings should be held between QCA and publishers in all subject areas. Third, consideration of resources in subject areas should be incorporated into the monitoring program. Fourth, the focus for evaluating resources should be placed on either particular subject areas or resource media. Fifth, the evaluation process should involve four activities: surveying available materials; considering how materials are used by teachers and students; involving participants from both educational and publishing backgrounds; and providing a clear focus on specific outcomes. Sixth, specific procedures should be determined to fit the particular focus of an evaluation.

5.1.7.2.2.3 Second Educational Resources Seminar

In March 1998, QCA and the Publishers Association convened a seminar in London to consider the implications of different procedures for selecting materials, and whether a centralised procedure should be introduced for adopting materials used in schools across England and Wales. School principals, teachers, publishers, researchers, curriculum developers, resource providers, librarians, booksellers and QCA officials discussed the possibilities for ensuring that materials of high quality could be produced and selected by comparing several potential procedures. These included providing an open materials' marketplace, curriculum agencies developing materials in partnership with publishers, curriculum agencies reviewing materials, voluntary submissions of materials for approval

against agreed criteria, an adoption list from which teachers select materials, and state production of materials. The discussion focused on several key issues. First, the role of materials was difficult to determine because of the lack of reliable data about how they were used in schools. Second, provision of resources was poor and uneven in many schools. Third, the introduction of the National Curriculum had affected the production time frames and the content of new materials. Fourth, an open materials' marketplace, collaborative approaches between publishers and curriculum agencies, and state adoption were likely to have differing effects on ensuring that materials of high quality were produced, selected and used in schools. Fifth, a centralised adoption procedure could improve the quality of teaching by reducing time teachers spent on identifying materials. Sixth, a centralised adoption procedure could prove to be costly to administer, if it was necessary to consider all of the approximately 3,000 materials produced each year in the United Kingdom. Since support for introducing a centralised adoption procedure was lacking, the participants concluded that the way forward should be sought in extending the good working relationship established between publishers and QCA. Publishers and QCA should determine agreed criteria for selecting materials, work collaboratively to develop exemplary materials by applying a similar approach to that used by the Schools Council, and work with TTA to develop teachers' competence in selecting materials. In addition, it was proposed that QCA should work with school librarians through the Library Association to produce guidelines for teachers to select materials, support research studies into the use of textbooks in schools, and consider producing guidance about the effective use of textbooks and audiovisual resources.

5.1.7.2.2.4 Second Round

Two independent methods were employed to evaluate the English materials. For key stage 2, a preliminary screening of the available resources was undertaken by three consultants, who scanned catalogues released by 16 major publishing companies, and surveyed specialised publishing companies. Following the identification of the range of available resources, a representative sample of 36 materials for reading and writing published by ten major publishing companies were analysed using a set of criteria. The final stage involved an ad hoc group of representatives from publishing companies and professional associations overseeing the survey of a sample of 500 primary schools to identify how schools used reading programs, English language arts programs, and materials focusing on a specific aspect of English language arts. For key stages 3 and 4, three consultants designed an evaluation instrument, which was applied to analyse four English language arts programs. To complement the analysis, an ad hoc group of representatives from publishing companies and professional associations oversaw the survey of a sample of 500 secondary schools to identify how schools used English language arts programs.

The Qualifications and Curriculum Authority (1998d) reported that the screening of available resources for English at key stage 2 identified a large range of materials varying considerably in their quality. Quality was influenced by the amount of time provided for their development, their match to the 1995 National Curriculum order for English, their presentation of a coherent rationale for teaching and learning in English, and their representation of modes of literacy relating to the National Literacy Strategy. It was found that the treatment of the four literacy skills also varied considerably. Little attention was paid to developing speaking and listening skills, and there were no specialised materials available to promote these skills. Recently published reading programs demonstrated a more comprehensive approach to reading than older materials. There was considerable variation in the quality of approaches to writing represented in available materials with the best recognising the link with reading by offering opportunities for extended writing. The use of stimulus material and activities in available materials designed to promote language study often led to only mechanical language work. Although all ten publishing companies attempted to cover the full range of genres, the best representation was found in reading programs, whilst those materials dealing with specific skills were less successful. On the other hand, non-fiction texts in both reading programs and those dealing with one aspect were of poor quality. All the reading programs and those materials dealing with one aspect attempted to extend phonic and graphic knowledge, and introduce more complex patterns. Although fewer writing programs were represented in the sample, most of these materials covered the process of writing adequately. However, the coverage of spelling, handwriting and punctuation skills in these materials was often decontextualised. Only a small proportion of the sample addressed the difference between standard and non-standard English, and many dated resources for grammar were still available. It was found from the 210 schools, which responded to the survey, that almost three-quarters used a reading program, but over half used them for less than 25 percent of classroom time. Slightly less than half of the responding schools used an English language arts program, usually consistently across key stage 2. Nine-tenths of the responding schools used some type of material focusing on some specific aspect of English language arts, most commonly comprehension, handwriting and spelling. For all types of materials, respondents rated them as good or satisfactory, although dates of purchase ranged evenly from less than three years to more than ten years.

Each of the English language arts programs for key stages 3 and 4, which consisted of two or more component student texts organised into units together with teacher's guides, claimed to cover the 1995 National Curriculum. The student texts varied in appropriateness of tone, usefulness of instructions, and the extent to which learning objectives were made clear. They presented subject matter suitable for the full range of students, although differentiation tended to be by outcome rather than differentiated tasks.

The teacher's guides available for three of the programs were of high quality, but not always sufficiently explicit about the role of the teacher in using the resources effectively. The degree to which each of the four programs integrated the four skills varied, particularly at key stage 4, where emphasis was given to reading and writing. All programs covered the National Curriculum requirements for speaking and listening in each unit, and the full range of required reading texts, although usually through the use of extracts rather than full texts. Many reading tasks were fragmentary with limited opportunity for engagement and sustained response. All programs provided a wide range of opportunities to produce different varieties of writing. Three of the programs attempted to integrate language study in a thematic way across the units. All programs were pitched at an appropriate level for key stage 3, although there were considerable variations between different student texts of a particular program, and sometimes within the same text. All programs were appropriate for GCSE at key stage 4. Although student texts within each program were organised sequentially, it was not always clear what constituted progression in such aspects as speaking and listening activities, grammar, and non-fiction texts. All programs provided assessment opportunities at key stages 3 and 4 for all attainment targets, although at key stage 3 greater emphasis was placed on formative rather than summative assessment. Although three of the programs claimed to be providing a complete coverage of the texts required for the National Curriculum, this was only achieved in the narrowest sense, since the majority of the texts were covered through extracts. As none of the programs were designed for students to work through them sequentially, each required varying degrees of teacher expertise to make them usable in classrooms. It was found from the 158 schools, which responded to the survey, that their use of the four programs varied from 15 to 48 percent. Schools were more likely to use such programs selectively as occasional sources for stimulus materials and to teach specific aspects. Purchasing patterns were changing with more schools buying individual and small numbers of copies instead of class sets. Schools were divided in rating their most used programs as good, satisfactory or unsatisfactory with regard to relevance, interest level and appearance. In rating the coverage of twenty aspects of the English order in their most used program, most respondents were more satisfied with the coverage of well-established aspects of the curriculum than newer areas of focus, such as, the use of information and communication technology.

The analysis of resources for Music employed a similar method to the Art project. The intention of conducting a survey to identify the range, perceived quality and use of resources in schools was advertised in a newsletter distributed to all schools, and at a meeting with music and educational publishers. The questionnaire was piloted through interviews with several teachers and publishers and trialed by the Nottinghamshire and

Harringey local education authorities. Four consultants administered the revised version of the questionnaire, and conducted interviews with small groups of teachers.

Based on responses received from 247 schools, the Qualifications and Curriculum Authority (1998e) found that a wide range of resources was used, but this range became narrower with progression from key stages 1 to 4. Approximately one-third of primary teachers, and over a half of key stage 3 teachers used music programs, but several of these failed to address the requirements in the National Curriculum adequately. Collections of activities were the most used resources, although textbooks and reference materials became more important in key stages 3 and 4. Many teachers in primary schools relied on songbooks, whilst materials for instrumental performances were more widely used in key stage 3. Most teachers used cassette tapes and compact disks for composing and listening activities. There were few resources available that fully supported the development of skills in both vocal and instrumental work, and the use of information and communication technology. Several strands in the National Curriculum were inadequately covered in resources. Teachers in primary schools tended to use music programs to support curriculum guidelines produced by local education authorities. On the other hand, teachers in secondary schools used a wider range of materials arranged in musical styles, historical periods and levels of difficulty, often supplementing them with resources they purchased to provide extension work. There was a wide variation between funds allocated to music with a quarter of the responding schools spending at least a half, almost half spending less than a fifth, and the remaining quarter spending very little on published resources. Many teachers spent considerable time compiling their own resources, because of lack of adequate funds. The provision of information about available resources was inadequate in many schools. As visits to schools by publishers' representatives were an unsatisfactory means for many teachers, local education authorities were seen as important venues for displaying resources before purchase.

5.1.7.2.2.5 Third Round

An ad hoc group of teachers, supervisors, higher education faculty, and representatives of publishing companies and equipment manufacturers oversaw the analysis of resources for Physical Education. This group surveyed a sample of 500 schools to identify the range, usefulness, availability, and the match of resources to the National Curriculum. Following the conduct of the questionnaire survey in September 1998, a working group identified the issues of fitness for purpose, access and ease of use, value for money, and gaps in provision, which were detailed in an interview schedule used to interview 62 teachers.

Based on responses received from 200 schools, the Qualifications and Curriculum Authority (1999) found that 174 published materials were used. Most schools used

physical education programs, which addressed the range of requirements in the National Curriculum. Teachers often used award programs promoted by the National Governing Bodies of Sport to promote higher achievement. In addition, teachers used coaching manuals, resource cards, reference books, lesson plans, worksheets, visual aids, posters, audio programs and tapes as supplementary materials. Only students taking GCSE examinations used textbooks. CD-ROMs, video cameras and videotapes were used to an increasing extent. Provision of large, free standing and fixed apparatus, and consumable equipment was adequate in most schools. Almost all resources described progression through a range of different methods, and graduated from simple to more complex skills, but most used only one method of differentiation for all students, and lacked information about student assessment. Three quarters of schools reported either static or reduced budgets allocated to physical education, which were largely used to purchase consumable equipment. Teachers rarely had the opportunity to view the range of available materials at displays, and relied on secondary sources for this information.

5.1.7.3 Approval

Three unitary awarding bodies are responsible for administering qualifications for schools, colleges, institutions of higher education and other education providers across England and Wales. The Business and Technology Education Council and the University of London Examinations and Assessment Council merged in 1996 to form Edexcel, a charity providing qualifications from offices in Birmingham, Bristol, Cardiff, Leeds, London and Manchester. Formed from a merger of the Royal Society of Arts and the University of Cambridge Local Examinations Syndicate in October 1998, Oxford Cambridge and RSA Examinations provides qualifications from offices in Cambridge, Coventry and Birmingham. In April 2000, the Associated Examining Board and the Northern Examinations and Assessment Board merged to form the Assessment and Qualifications Alliance, an independent company providing qualifications from offices in Bristol, Guildford, Harrogate, Newcastle and Manchester. In January 1999, the Joint Council for General Qualifications was formed to provide the unitary awarding bodies with an opportunity for fulfilling common interests, a forum for expressing views on national issues, a vehicle for collective approaches, and a forum for discussions with teachers and their representative organisations.

The unitary awarding bodies provide syllabuses, known as specifications, for subjects for the GSCE, the General Certificate of Education (GCE), the General National Vocational Qualifications, the Entry Level Certificate, and Advanced Extension Awards. The extent to which each unitary awarding body approves or recommends materials in specifications for GSCE and GCE examinations varies considerably. Edexcel adopts a multiple number of approved materials for the list of literary texts for GCE English Literature, and identifies

from materials in use multiple numbers of recommended materials for lists in all other GCE and GSCE specifications. Oxford Cambridge and RSA Examinations adopts multiple numbers of approved materials for lists of literary texts for GSCE and GCE English Literature, and identifies from materials in use multiple numbers of recommended materials for lists in all other GCE specifications. The Assessment and Qualifications Alliance adopts multiple numbers of approved materials for lists of literary texts for GSCE and GCE English Literature.

5.1.7.4 Quality and Use

Numerous reports have drawn attention to shortages and poor quality of materials used to deliver the National Curriculum. In a report on the implementation of the original National Curriculum during its first year, the Department of Education and Science (1991) found that whilst resources were adequate for key stage 1, they were less satisfactory for key stages 2 and 3. More specifically, primary schools had devoted much effort to renewing their resources for key stage 1, although there were particular deficiencies in good quality books in many schools. In key stage 2, the provision of textbooks was satisfactory, although many schools were unaware of the wide range of resources needed for particular subjects. Although most secondary schools had sufficient resources for the first year of key stage 3, more than half had particular deficiencies due to lack of understanding about the needs of particular subjects.

A series of subject reports on English, Geography, History, Mathematics, Science, and Technology, covering the first year of full implementation of the original National Curriculum, amplified problems relating to the provision and use of resources in schools. On the basis of inspections of 450 primary schools, 21 middle schools and 149 secondary schools, the Office for Standards in Education (1993b) reported that provision of reading materials for English in primary schools had improved for key stage 1 often to the detriment of key stage 2. However, the provision of reading materials for key stage 3 was inadequate in 30 percent of middle and secondary schools. On the basis of inspections of 114 primary schools, 7 middle schools and 63 secondary schools, the Office for Standards in Education (1993c) reported that shortages of suitable textbooks, atlases and maps for Geography were a problem in nearly three-quarters of primary schools. Also, more than one-third of middle and secondary schools were constrained in meeting National Curriculum requirements because of deficiencies in textbooks and reference materials. On the basis of inspections of 174 primary schools, 13 middle schools and 118 secondary schools, the Office for Standards in Education (1993d) reported that the range, quality and use of resources for History were less than satisfactory in about one-third and good in only one-tenth of primary schools. However, two-thirds of middle and secondary schools had a satisfactory or a better range, quality and use of resources for the first year of key stage 3, although some schools used inadequately prepared textbooks. On the basis of inspections of 480 primary schools, 13 middle schools and 389 secondary schools, the Office for Standards in Education (1993e) reported that the provision of resources for Mathematics was satisfactory in four-fifths of primary and secondary schools. On the basis of inspections of 98 primary schools, 15 middle schools and 227 secondary schools, the Office for Standards in Education (1993f) reported that the provision of resources for Science was satisfactory in three-quarters of primary schools, whilst their provision had improved in secondary schools. On the basis of inspections of 330 primary schools and 310 secondary

schools, the Office for Standards in Education (1993g) reported that many schools lacked suitable resources for Design and Technology, often because teachers were unfamiliar with the range of available materials.

More recent reports have identified an improvement in the quantity and quality of resources in schools. On the basis of inspections of 6,027 primary schools and 955 secondary schools, the Office for Standards in Education (1998) reported that the quantity and quality of resources were good in 29 percent, adequate in 60 percent, and unsatisfactory in 11 percent of primary schools. They were also good in 25 percent, adequate in 48 percent, but unsatisfactory in 26 percent of secondary schools. On the basis of inspections of 6,218 primary schools and 645 secondary schools, the Office for Standards in Education (1999) reported that the quantity and quality of resources were good in 28 percent, adequate in 62 percent, and unsatisfactory in 10 percent of primary schools. They were also good in 20 percent, adequate in 53 percent, but unsatisfactory in 27 percent of secondary schools. On the basis of inspections of 3,508 primary schools and 704 secondary schools, the Office for Standards in Education (2000) reported that the quantity and quality of resources were good in 32 percent, adequate in 63 percent, and unsatisfactory in 5 percent of primary schools. They were also good in 22 percent, adequate in 60 percent, and unsatisfactory in 19 percent of secondary schools.

Few comparative studies on the quality of textbooks used in schools in England and other countries have been reported. Bierhoff (1996) compared mathematics textbooks used in primary schools in England, Germany and the German-speaking cantons in Switzerland, contrasting English textbooks with German and Swiss textbooks, finding that their differences reflected dissimilar pedagogies for teaching mathematics. Bierhoff argued that particular features in English textbooks limited student achievement. These features constituted placing an emphasis on written calculation and inadequate exercises on the order of numbers, lack of strategies to develop mental calculation, failure to consolidate mathematical foundations, limited attention given to each topic, and lack of attention to progression from simple to complex concepts.

5.1.7.5 Information Services

5.1.7.5.1 British Educational Communications and Technology Agency

Formed from the National Council for Educational Technology to further the use of information and communications technology to raise educational standards and improve the effectiveness of educational professionals and institutions, the British Educational Communications and Technology Agency (BECTA) initiated four projects aimed at evaluating resources for information and communications technology.

As part of the 1996-1997 Multimedia Portables for Teachers project, and the Portables '98 project, over 1,000 educational CD-ROMs were evaluated for BECTA by teams of teachers and school librarians nominated by local education authorities, professional bodies and subject associations. A searchable database of CD-ROM evaluations is maintained on BECTA's web site.

In 1999, BECTA initiated the Curriculum Software Initiative at the behest of the Department for Education and Employment. BECTA conducted seminars covering the eleven National Curriculum subjects, religious education, literacy, and numeracy in 1999, and the cross-curricular topics of education for sustainable development, personal, social and health education, and citizenship in 2000. Intended to identify effective information and communications technology to support the curriculum, curriculum developers, teachers, consultants, and representatives from government agencies and professional associations participating in each seminar published a report covering this issue in the particular subject. Following the seminars, suitable products were identified and matched to specific educational requirements.

BECTA upgraded its Educational Software Database, originally developed more than ten years previously, to provide a more effective tool for teachers to select educational software. Launched in January 2001, the BECTA Educational Software Database contains a searchable database of information about software provided by publishers for preschool to further education.

BECTA also developed the Teacher Resource Exchange, a web site providing a searchable database of teacher-developed resources designed to assist teachers share resources. By applying a systematic approach to building a basic idea into a finished resource, a teacher's initial idea is classified as a 'first thought'. After feedback from other teachers, it is promoted to the status of a 'developing idea'. Once it has been tried and tested by other teachers, it can then be promoted to the final level of a 'new resource'. Teachers submit a new resource by first entering descriptive information, and then assigning various categories to the resource before editing the resource, or attaching files or links. Users may use the Teacher Resource Exchange to chart an idea's progress, and can ask new questions or make further suggestions for improvement at any time. First established as a pilot site in September 2000, the Teacher Resource Exchange was launched in January 2002 with more than 10,000 registered teachers having submitted more than 2,000 contributions. In December 2002, a panel of experts began selecting the best resources from the database for inclusion in a new web site, Curriculum Online.

5.1.7.5.2 Department for Education and Skills

The Department for Education and Skills commissioned a study on the future development of the National Grid for Learning. The report recommended that partners should be sought to develop the portal, and proposed that electronic learning credits should be provided to schools to stimulate the marketplace in multimedia electronic materials. As a consequence, the Department for Education and Skills released a consultation paper in April 2001, which presented a range of options from a market-based approach to a government-led approach for developing Curriculum Online. Overall, the 159 respondents to the consultation supported the proposals, favouring a market-based approach.

In December 2001, the government funded a consortium between the Department for Education and Skills, broadcasters and software producers to develop Curriculum Online to link multimedia electronic materials to the National Curriculum. Launched at the BETT Show held in London in January 2003, Curriculum Online consists of a searchable database of information on multimedia electronic materials aligned to the National Curriculum. At its launch, Curriculum Online contained information provided by more than 300 suppliers for 11,000 materials, which were selected on the basis of four criteria. First, a minimum of 80 percent of a material's component parts must be in digital format with the remaining 20 percent being attributable to non-digital support materials, such as training or guides. Second, the product must be specifically targeted to support the curriculum as taught in England. Third, all digital components must offer significant additional information and communication technology functionality compared to a non-digital form of the same material. Fourth, the material must clearly state any technical requirements or specifications needed to run the material. Information on each material provides a summary, technical requirements, Internet links to suppliers, product images and demonstrations, and independent evaluations and teacher reviews. Additional features on Curriculum Online include a directory of suppliers, information about using multimedia electronic materials in the classroom, case studies, and examples of best-practice materials. Registration allows users to establish a personal 'wish-list' of resources, which can be stored for further reference, add product reviews, and receive newsletters. Materials catalogued in Curriculum Online are purchased from suppliers with electronic learning credits, funds distributed by the Department for Education and Skills from central government to local education authorities. Teachers recommending materials for purchase apply to the electronic learning credit budget holder appointed to their schools.

In 2002, the Department for Education and Skills contracted the National Centre for Social Research and the University of Bristol to conduct a four-year evaluation of Curriculum Online to assess its educational impact on schools, its operational effectiveness, and its impact on suppliers. The educational impact of Curriculum Online was measured through

a series of surveys supported by qualitative research in schools. Kitchen and Finch (2003) reported the findings of the first survey intended to collect baseline data on the use of information and communication technology resources in schools. Between November 2002 and January 2003, data were collected at the school-level and in selected subject areas from a random stratified sample of 880 primary and secondary schools across England. It was found that the average ratio of computers per student in primary schools was 1:8, whilst it was 1:5.2 in secondary schools. Broadband Internet connections were available in 84 percent of secondary schools, but in only 22 percent of primary schools. All secondary schools had information and communication technology rooms and 89 percent had computer facilities in their classrooms, but only 22 percent of primary schools had information and communication technology rooms. The process for purchasing software was centralised in primary schools with 65 percent stating that requests were submitted to the principal or information and communication technology coordinator, with 21 percent stating that a senior staff member selected software. The process was more devolved in secondary schools with 59 percent stating that their departments made ad hoc purchases, and 23 percent stating that their departments purchased software at set times, with 46 percent stating that selection was made independently within their departments. However, only 20 percent of secondary teachers and 12 percent of primary teachers reported that it was easy to find relevant software for their subject. Although the majority of respondents believed that teachers were confident using information and communication technology, the frequency of use of information and communication technology resources in lessons was low. Only 22 percent of primary teachers reported using computer packages and 20 percent reported using subject-specific software in half or more of all lessons. Only 10 percent of secondary teachers reported using subject-specific software in half or more of all lessons. Although 87 percent of primary teachers and 88 percent of secondary teachers among school-level respondents reported being aware of Curriculum Online, only 45 percent of primary teachers and 46 percent of secondary teachers among subject respondents reported being aware of Curriculum Online.

5.1.7.5.3 Centre for Research in Educational ICT

The Centre for Research in Educational ICT, based at Homerton College, Cambridge, formed an alliance with Sparrowhawk and Heald, a Cambridge-based consulting firm specialising in multimedia for education, to design the Teachers Evaluating Educational Multimedia (TEEM) project. The initial pilot involved the evaluation of educational software emphasising literacy. Following approval by the Department for Education and Employment, the project was funded to expand its scope to include all subjects. After forming a consortium of education agencies and professional associations, the TEEM web site was launched in 1999.

Initially, a developer or publisher supplies a copy of an educational software item to the TEEM project together with a bond. Following a check of its applicability to the National Curriculum, this information is added to the searchable database on the TEEM web site. Using a network of trained teachers from across England and Wales, TEEM evaluators apply a set of instruments to evaluate educational software on CD-ROMs and web sites, and provide case studies on their use in classrooms. Each new title is added to a list, which is circulated to the evaluators. Following successful bids, two evaluators are chosen to evaluate the item by presenting draft evaluations within four weeks. Following reviews by editors, each evaluator submits a revised evaluation together with a case study. Following final editing, the evaluations and case studies are posted on the TEEM web site.

5.2 Wales

5.2.1 Formation of the National Agency

In August 1988, the Education Reform Act established a new agency to develop, implement and monitor the National Curriculum and the accompanying assessment system in Wales. The Curriculum Council for Wales (CCW), an agency governed by a fourteen-member council, was established to conduct consultations on the subjects of the National Curriculum, and advise the Secretary of State for Wales. Later, it provided advice to educators on implementing the National Curriculum, reviewed the curriculum, and forged links within the educational community. In April 1994, the functions of CCW were expanded, and it was renamed the Curriculum and Assessment Authority for Wales or Awdurdod Cwricwlwm ac Asesu Cymru (ACAC). In 1997, ACAC was amalgamated with the National Council for Vocational Qualifications Welsh Office, and renamed the Qualifications, Curriculum and Assessment Authority for Wales or Awdurdod Cymwysterau, Cwricwlwm ac Asesu Cymru (ACCAC).

5.2.2 Curriculum Cymreig

An important aspect of CCW's work involved developing distinctive programs of study for History, Geography, Art, Music, and Welsh. In 1988, CCW commenced a review of the whole curriculum in order to develop a rationale for delivering the National Curriculum to schools in Wales. Released in 1989, a consultation document was reviewed by more than 1,000 teachers and lay people. The outcome of the consultation, a guidance document published by the Curriculum Council for Wales (1991), presented a rationale for a Curriculum Cymreig, or a National Curriculum for Wales, consisting of three elements. First, the Welsh language should be used as a subject and medium for teaching and learning. Second, particular aspects of content in History, Geography, Art and Music should relate to Wales. Third, learning situations should be placed in a Welsh context in other subjects. In April 1993, CCW disseminated an advisory document, covering the three

elements by means of examples, topic-based approaches, cross-curricular themes and extra-curricular activities, to assist teachers implement the Curriculum Cymreig in different local settings within Wales.

5.2.3 Second Review

5.2.3.1 Contextual Background

In July 1997, the Labour Government presented the first policy statement written on education for Wales in modern times (Davies, 1997). It argued that schools in Wales needed to raise student performance, recognise teachers' professionalism, broaden qualification routes, and cooperate in the use of resources. It also stated that the National Curriculum remained central in achieving these goals. Achievement of these goals, however, required applying a new approach over a five-year period from 1997 to 2002, involving seven policy principles. First, better education and training would be a cardinal priority. Second, policies would be redesigned to meet the needs of all students. Third, standards are more important than structures. Fourth, intervention would be in inverse proportion to success. Fifth, under-performance would not be tolerated. Sixth, the Welsh Office would work in partnership with other education organisations through an Education and Training Action Group for Wales. Seventh, government policy would be applied in ways that reflect the needs and circumstances of Wales.

5.2.3.2 Revision

In September 1997, the Parliamentary Under-Secretary of State for Wales asked ACCAC to review the National Curriculum for Wales in relation to basic and key skills, breadth and balance, manageability, continuity and progression, work-related education, and personal and social education. A consortium was formed between the Department of Education, the University of Wales, and the Scottish Council for Research in Education (SCRE) to assist with key stages 1 to 3, and Social Market Strategic Research to assist with key stage 4. The consortium conducted case studies and questionnaire surveys in samples of schools, held three conferences for educators, interviewed officials from local education authorities, consulted professional associations, and reviewed educational literature. In response to an additional request made in January 1998 for advice on ways the curriculum in primary schools might be reduced, ACCAC advised the Minister that the content should be reduced in Design and Technology, History, Geography, Physical Education, Art, and Music. Following consultation with schools, professional associations and teachers' unions across Wales, the Minister accepted this advice and the changes came into effect in September 1998.

The findings of the wider review, submitted to the Minister in February 1998, were released in September 1998 as agenda for action. These agenda would ensure that from 2000 there would be a single, coherent framework for curriculum and assessment, a set of revised statutory orders, entitlement to personal and social education and work-related education, and a professional development program and materials to assist teachers implement the changes. Beginning in October 1998, ACCAC worked with committees of teachers to revise the statutory orders, which were presented to the Minister in April 1999. A two-month consultation on the statutory orders, conducted within the educational community by SCRE, led to more than 2,800 responses being received, a series of five conferences being held with 350 teachers, as well as three regional conferences and two subject conferences. At the same time, ACCAC undertook parallel consultations on the draft frameworks for Personal and Social Education, and Work-Related Education. In its report presented to the National Assembly for Wales, the Qualifications, Curriculum and Assessment Authority for Wales (1999) recommended that the revised statutory orders should be approved, and introduced for key stages 1 to 3 in September 2000 and for key stage 4 in September 2001.

5.2.3.3 Statutory and Non-Statutory Orders

Although the National Curriculum orders, published in 1995, were the subject of the review, the revised National Curriculum orders released by ACCAC in 1999 diverged in many aspects of detail from the National Curriculum for England. Consequently, they may be viewed as providing a National Curriculum for Wales, which is evolving towards a separate entity. Following further revision in response to the consultation, the National Assembly for Wales approved the statutory orders in January 2000.

Following approval by the National Assembly for Wales in March 2000, non-statutory frameworks for Personal and Social Education, and Work-Related Education were released. Launched at a conference at Llandrindod Wells in April, the framework for Work-Related Education for 14- to 19-year-olds, published by the Qualifications, Curriculum and Assessment Authority for Wales (2000a), promotes a shared vision for collaboration through local partnerships and support networks between schools and employers. The framework lists the learning outcomes and key learning opportunities for all 14- to 19-year-olds, and guidelines for reviewing, planning and evaluating work-related educational activities. Launched at a conference at Newport in May, the Personal and Social Education framework, published by the Qualifications, Curriculum and Assessment Authority for Wales (2000b), identifies the attitudes, values, skills, knowledge and understanding that should be addressed in schools. The framework lists learning outcomes for key stages 1 to 4 relating to social, community, physical, sexual, emotional, spiritual, moral, vocational, learning and environmental aspects.

5.2.4 Role of Materials

5.2.4.1 Commissioning Program

Beginning in 1995, ACCAC commissioned publishing companies to develop materials to support the teaching of Welsh, other subjects through the medium of Welsh, and the teaching of Wales-specific aspects of the Curriculum Cymreig through bilingual education (Qualifications, Curriculum and Assessment Authority for Wales, 2003). Between 1995 and 2002, ACCAC commissioned over 230 projects that produced 1,500 materials, of which 70 percent were published in Welsh and 30 percent in Welsh and English. Of the materials published in Welsh, 40 percent were for teaching Welsh, and 60 percent for teaching other subjects through the medium of Welsh.

Each year ACCAC consults representatively selected advisory panels of teachers convened for each subject in October to formulate an annual commissioning program. The priorities for commissioning projects focus on maintaining a general balance across the curriculum, addressing curriculum areas where a lack of provision exists, meeting the needs of new initiatives, and meeting assessment requirements. As the average life of materials is projected to be five years, ACCAC employs a flexible rotation schedule to commission materials every three to four years.

Detailed specifications are drawn up for each project included in the annual commissioning program approved by ACCAC in January. A process of competitive bidding, undertaken in accordance with European Union guidelines, involves advertising in the press and distributing bid documents to interested publishers listed in a register. Publishers are required to submit bids in May, and ACCAC allocates contracts in July. Publishers develop the materials between July and September. As well as specifying guidelines for quality control in contracts, groups of ACCAC officials and teachers monitor the quality of the content in the materials during their development.

Marketing of the materials is the main responsibility of the publishing companies, since they receive the income from all sales. However, ACCAC contributes by publicising newly published materials in its newsletter, and works with the Welsh Books Council to produce an annual catalogue. Since 1998, ACCAC has provided opportunities for teachers to view materials by supporting the Welsh Books Council's schools service enabling a mobile display to visit each secondary school annually and each primary school biennially. All materials produced in a particular year are also displayed at the Urdd and National Eisteddfodau. The materials may be purchased from all bookshops in Wales, as well as being ordered directly from publishers.

A contractual requirement for publishing companies to provide ACCAC with sales figures every six months allows the progress of the commissioning program to be assessed. In addition, ACCAC commissioned two evaluation studies between 1997 and 2000. In each case, materials published from seven projects were evaluated by means of interviews, focus groups, and surveys of teachers. The findings indicated respondents' knowledge of the materials, the numbers who bought them, their educational quality, their suitability for their intended purposes, the use made of them in the classroom, and their influence in relation to improving achievement. During this period, ACCAC also commissioned a value for money study on the printing element of the commissioned projects.

5.3 Scotland

5.3.1 Historical Background

Unlike the other countries making up the United Kingdom, Scotland does not have a statutory curriculum mandated by legislation. A common curriculum framework, with segments for both the primary and secondary levels, evolved over many years through a process of consultation between various interest groups. Gatherer (1989) reported that the centralised control over curriculum development exerted by the Scottish Education Department was first challenged in the Advisory Council's report on secondary education published in 1947, which gradually stimulated a climate that was receptive to the formation of a Consultative Committee on Educational Matters in 1961. This body proved ineffective, and was replaced by the Consultative Committee on the Curriculum (CCC) formed in 1965 to maintain a general oversight of the curriculum. Over more than twenty years of operation, CCC strengthened its control over curriculum development through a structure of subcommittees and working parties eventually organised under two overarching committees, the Committee on Primary Education and the Committee on Secondary Education. In the late 1970s, CCC also assumed ownership of a network of curriculum development centres.

Consequently, a collaborative approach for curriculum development arose in Scotland involving almost every education organisation, but especially the Scottish Office Education Department, CCC, the Scottish Examination Board, and the Scottish Vocational Education Council. Representatives from these organisations, personnel from institutions of higher education, representatives of education authorities, HM Inspectors of Schools, and groups of teachers were represented on review and development groups for aspects relating to the primary and secondary levels, and on joint working parties for aspects relating to post-compulsory education.

5.3.2 Formation of the National Agency

Although a review of CCC's structure in 1980 led to rationalisation that reduced its policy-making role in favour of a more functional role, a sweeping review in 1986 recommended establishing a new agency on a commercial basis with greater representation to be given to teachers on committees. Consequently, CCC and three curriculum development centres were amalgamated in March 1988 to form the Scottish Consultative Council on the Curriculum (SCCC). Managed by a 31-member board, SCCC was established for the purpose of reviewing the school curriculum, and advising the Secretary of State for Scotland. Later, it offered guidance to education authorities and schools on implementing the common curriculum, and conducted a curriculum development program.

In July 2000, SCCC merged with the Scottish Council for Educational Technology to form a new agency, Learning and Teaching Scotland. Established for the purpose of reviewing the school curriculum and the use of information and communication technology and advising Scottish ministers on these matters, Learning and Teaching Scotland also undertakes research and development work in consultation with education authorities and schools.

5.3.3 Common Curriculum Framework

5.3.3.1 Primary Level

5.3.3.1.1 Development

The curriculum framework for the primary level was developed in response to guidance issued in publications of HM Inspectors of Schools and CCC, and documents provided by education authorities. The framework evolved over a twenty-year period from national statements on the general rationale and framework for the curriculum expressed in a series of official reports (Scottish Education Department, 1965; Scottish Education Department, 1971; Scottish Education Department and Her Majesty's Inspectorate, 1980; and Consultative Committee on the Curriculum, 1983).

In 1987, the Secretary of State for Scotland released a consultation paper on curriculum and assessment. This paper identified the need for guidance on what students should learn at the primary level, and the first two years of the secondary level, improved assessment of student performance, and better information for parents about the curriculum and their children's progress. Following a period of consultation, review and development groups were appointed by SCCC to provide advice about the whole curriculum and five curriculum areas: Language (English, Modern European Languages, Latin, Gaelic); Mathematics; Environmental Studies; Expressive Arts; and Religious and Moral Education (including Personal and Social Development). In addition, two groups, one on assessment

and the other on reporting, provided complementary advice. Each Review and Development Group reviewed practice in its area in order to establish the appropriate knowledge, understanding, skills and attitudes to inform the formulation of National Guidelines identifying the aims, content, approaches, and the means for monitoring and recording student performance. The review and development groups issued reports during 1990 and 1991, which were subjected to consultation within the educational system, before being released by the Secretary of State for Scotland.

National Guidelines, covering students aged 5 to 14 years, were first issued to schools by the Scottish Office Education Department in the 1991-1992 school year. These referred to English Language (Scottish Office Education Department, 1991a), Mathematics (Scottish Office Education Department, 1991b), and assessment (Scottish Office Education Department, 1991c). National Guidelines for Expressive Arts (Scottish Office Education Department, 1992a), Latin (Scottish Office Education Department, 1992b), Modern European Languages (Scottish Office Education Department, 1992c), Religious and Moral Education (Scottish Office Education Department, 1992d), and reporting (Scottish Office Education Department, 1992e) were issued in the 1992-1993 school year. National Guidelines for Environmental Studies (Scottish Office Education Department, 1993a), Gaelic (Scottish Office Education Department, 1993b), and Personal and Social Development (Scottish Office Education Department, 1993c) were issued in the 1993-1994 school year. In addition, the Scottish Office Education and Industry Department (1997) published a curriculum framework for the preschool year.

5.3.3.1.2 National Guidelines

The original National Guidelines for the five curriculum areas consist of six sections. The first section presents a rationale statement setting out the philosophic position held on the nature, purpose, aims, and approach to teaching and learning within the curriculum area. The second section sets out the attainment outcomes and targets specified at five levels. The third section presents the programs of study, which indicate some ways teachers may plan and organise the content for teaching. The fourth section presents advice to assist teachers in catering for student differences in the areas of special educational needs, talent, language and culture. The fifth section explains how assessment should be used as an integral part of teaching and learning. The sixth section addresses several specific issues relating to the content and scope of the curriculum area.

English Language is organised into four programs of study. The program of study for listening requires students to progress through the five levels across five strands: listening for information, instructions and directions; listening in groups; listening in order to respond to texts; awareness of genre; and knowledge about language. The program of

study for talking requires students to progress through the five levels across six strands: conveying information, instructions and directions; talking in groups; talking about experiences, feelings and opinions; talking about texts; audience awareness; and knowledge about language. The program of study for reading requires students to progress through the five levels across six strands: reading for information; reading for enjoyment; reading to reflect on the writer's ideas and craft; awareness of genre; reading aloud; and knowledge about language. The program of study for writing requires students to progress through the five levels across seven strands: functional writing; personal writing; imaginative writing; punctuation and structure; spelling; handwriting and presentation; and knowledge about language. Teachers should use stories, poems, dramatic texts, newspapers, informational and reference texts, radio, television, audio-visual and computer-based materials.

Mathematics is organised into four programs of study. Problem solving and inquiry requires students to progress through three steps: starting a task; doing a task; and reporting on a task. Information handling requires students to recognise, understand, use and apply concepts, facts and techniques as they progress through the five levels across four strands: collecting information; organising information; displaying information; and interpreting information. Number, money and measurement requires students to understand, use and apply concepts, facts and techniques as they progress through the five levels across 11 strands organised into four categories: number and number notation; methods of calculating using number; pattern, sequences and relationships; and measure. Shape, position and movement requires students to recognise, understand, use and apply concepts, facts and techniques as they progress through the five levels across four strands organised into two categories: properties of two and three dimensional shapes; and properties of position and movement. Teachers should use textbooks, packaged materials, reference materials, games, constructional toys, and equipment, such as, calculators, measuring devices, structured apparatus, and drawing instruments.

Expressive Arts is organised into four programs of study. The program of study for Art and Design requires students to progress through the five levels across six strands: investigating visually and recording; using media; using visual elements; creating and designing; communicating; and observing, reflecting, describing and responding. The program of study for Drama requires students to progress through the five levels across six strands: investigating and experimenting; using movement and mime; using language; creating and designing; communicating and presenting; and observing, listening, reflecting, describing and responding. The program of study for Music requires students to progress through the five levels across six strands: investigating (exploring sound); using the voice; using instruments; creating and designing; communicating and presenting; and observing,

listening, reflecting, describing and responding. The program of study for Physical Education requires students to progress through the five levels across six strands: investigating and developing fitness; using the body; applying skills; creating and designing; cooperating, sharing, communicating and competing; and observing, reflecting, describing and responding.

Religious and Moral Education is organised into three programs of study. Both the programs of study for Christianity and other world religions require students to progress through the five levels across five strands: celebrations, festivals, ceremonies and customs; sacred writings, stories and key figures; beliefs; sacred places, worship and symbols; and moral values and attitudes. The program of study for personal search requires students to progress through the five levels across three strands: the natural world; relationships and moral values; and ultimate questions. Teachers should use books, newspapers, magazine articles, school-produced materials, audiovisual materials, and computer-based materials.

5.3.3.2 Secondary Level

5.3.3.2.1 Development

The curriculum framework for the secondary level was first formulated in response to requests from education authorities and schools for a rationale statement, which would draw together the findings of key reports on Scottish education. Consequently, the Consultative Committee on the Curriculum (1983) released a position statement setting out a rationale and framework based on the emerging standard grade provision for full two-year and short courses in eight modes of activity. A discussion paper on curriculum provision for 10- to 14-year-olds, issued by the Consultative Committee on the Curriculum (1986), was subjected to widespread consultation before CCC submitted detailed advice to the Secretary of State for Scotland in March 1987. In response, the Consultative Committee on the Curriculum (1987) published an overall rationale statement and separate frameworks for each of the three levels for standard grades: the first covering grades 7 and 8; the second covering grades 9 and 10; and the third covering grades 11 and 12. Following approval by the Secretary of State for Scotland in November 1987, the National Guidelines were issued to education authorities and schools.

In October 1988, SCCC advised secondary schools of its intention to revise the National Guidelines to take account of subsequent policy decisions and specific concerns raised about the original guidelines. After consultation with schools on the revised draft, the first revised edition was published by SCCC in 1989. In 1996, the Secretary of State for Scotland invited SCCC to undertake a further revision to take account of the government's Quality and Standards Initiative, the 5-14 National Guidelines, and the Higher Still Development

Program. A task group of SCCC members produced a draft for a second revised edition, which was distributed for review to schools, education authorities and other interested organisations in August 1998. Following consultation on the draft during the autumn of 1998, the second revised edition was approved by the Secretary of State for Scotland in January 1999, and published by the Scottish Consultative Council on the Curriculum (1999).

5.3.3.2.2 National Guidelines

The National Guidelines state that the structure of the curriculum for grades 7 and 8 is encompassed within the 5 to 14 program with amended titles for the five curriculum areas: Language; Mathematics; Science, Technology and Society; Expressive Arts and Physical Education; and Religious and Moral Education. The structure of the curriculum for grades 9 to 12 is organised into eight modes of activity: Language and Communication; Mathematical Studies and Applications; Scientific Studies and Applications; Social and Environmental Studies; Technological Activities and Applications; Creative and Aesthetic Activities; Physical Education; and Religious and Moral Education. Whilst it is recommended that students in grades 9 and 10 should be engaged in studies within each of the eight modes, it is not expected that each mode be represented in the curriculum of each student in grades 11 and 12. The National Guidelines conclude with model frameworks proposed for each of the three stages. The framework for grades 7 and 8 should provide a coherent continuation of experiences in the primary school, and as steps on the way to future choices by requiring students to engage in activities related to the five specified areas. The distribution of time should be allocated in specified amounts to each mode with the remaining 20 percent being used for enhancement, special courses, remediation or individual studies, profiling activities, and collective school activities. The framework for grades 9 and 10 should build on the learning experienced in grades 7 and 8 by allowing students to make negotiated choices within specified amounts of time totalling 1,200 hours over two years allocated to the eight modes. The remaining 30 percent should be used for additional study in the eight modes, special courses, work experience, and progression within colleges of further education. The framework for grades 11 and 12 should provide a bridge to further and higher education, employment and adult life by offering students opportunities to engage in a greater depth of study associated with the gradual increase in specialisation. However, the eight modes should remain an important reference point for curriculum planning.

5.3.4 Implementation

Following their release between June 1991 and June 1993, education authorities and most independent schools progressively implemented the National Guidelines, covering students aged 5 to 14 years, together with inservice strategies for teacher development. The Scottish Office Education Department (1994) published a time frame recommending that all

schools should implement the National Guidelines by the end of 1998-1999. A process consisting of the four steps of familiarising and raising awareness, reviewing existing programs, determining specific school objectives for incorporation into development plans, and consolidating the objectives in practice should be applied. The implementation of the National Guidelines was supported by a variety of professional development activities and resources. In May 1994, SCCC and the Scottish Office Education Department published a set of staff development modules consisting of three components: workshop materials; exemplars; and management issues. Each workshop material focused on a key stage in the implementation process, the exemplars provided a range of formats for documenting implementation plans, whilst the third component covered important management issues critical to effective implementation. In February 1996, SCCC and the Scottish Office Education Department commenced a program of national seminars to support implementation of the National Guidelines.

HM Inspectors of Schools and research bodies, such as SCRE, evaluated the implementation of the National Guidelines. Harlen (1995) reported the main findings of a major evaluation of the implementation of the National Guidelines consisting of four projects. SCRE conducted the project on curriculum and assessment for the primary level. Northern College, Aberdeen, conducted the project on curriculum and assessment for the secondary level. Strathclyde University, Glasgow, conducted the project on reporting. The University of Edinburgh conducted the project on test materials and their use at the primary level. By surveying a national sample of approximately 120 secondary schools and 200 primary schools, the evaluation identified a typical approach for implementing the National Guidelines involving eight steps. First, the guidelines were studied. Second, the school's program and resources were reviewed. Third, the school's program was revised to accommodate the guidelines. Fourth, individual teacher plans were developed to reflect the guidelines. Fifth, new content was introduced into classrooms. Sixth, new resources were introduced. Seventh, the planning of all the school's teachers was matched to the guidelines. Eighth, the assessment and reporting guidelines were introduced.

5.3.5 Review

5.3.5.1 Revision

In response to the government's intention to extend preschool education to children from the age of 3 years, SCCC reviewed the curriculum framework for the preschool year. SCCC appointed an Early Education Reference Group, which produced a revised draft of the framework in December 1998. Consultation on the revised draft involved a survey by questionnaire to which more than 750 responses were received from across Scotland. The Scottish Office Education and Industry Department and Scottish Consultative Council on

the Curriculum (1999) published the revised framework, which was distributed to early childhood centres following its release in June.

In a report issued in 1997, HM Inspectors of Schools recommended that the National Guidelines for Environmental Studies should be reviewed to take account of challenges experienced by teachers in their implementation. Consequently, SCCC surveyed teacher education institutions, education authorities, professional associations and relevant interest groups in December 1998 by questionnaire to elicit views about the proposed review. The analysis of more than 2,800 responses indicated endorsement of the main proposals. However, the respondents expressed a clear wish for making only nominal changes, a need for professional development and clarification of assessment techniques, and taking account of implications for small schools and composite class groups. Additionally, there was strong support for the scope of Environmental Studies to be reduced to three strands: Social Subjects; Science; and Technology. The revision led to the production of three separate sets of draft guidelines for Society, Science and Technology, Information and Communication Technology, and Health Education, released in November 1999 for a two-month consultation. The consultation yielded more than 2,300 responses, which were analysed by SCRE. Following revision of the drafts, the revised National Guidelines for Environmental Studies were issued to schools in November and December of 2000 (Scottish Executive Education Department, 2000a; Scottish Executive Education Department, 2000b; Scottish Executive Education Department, 2000c).

In October 1998, the Minister for Education formed the Languages Action Group, which recommended that the National Guidelines for Modern European Languages should be reviewed. In January 1999, SCCC appointed a Review and Development Group on Modern Languages to prepare new guidelines as well as advise on policy development and implementation, attainment targets, materials, and professional development by consulting a wide range of people with expertise. Taking into account the Modern Languages in Primary School initiative, the range of good practice and research findings into aspects of teaching and learning, the review and development group revised the National Guidelines, which were released for a two-month review in October 1999. The consultation yielded more 660 responses, which were analysed by SCRE. Following revision, Learning and Teaching Scotland (2000) published the revised National Guidelines.

5.3.5.2 Revised National Guidelines

Each of the revised National Guidelines consists of five sections. The first section sets out the rationale statement. The second section provides a framework for the subject area. The third section offers guidance on issues related to planning effective programs of study. The

fourth section offers guidance on aspects of teaching, learning and assessment. The fifth section sets out the strands and attainment targets for six levels.

Society, Science and Technology are organised into three programs of study. The program of study for Society requires students to progress through the six levels across three outcomes: people in the past; people and place; and people in society. For people in the past, students cover the four strands of people, events and societies of significance in the past, change and continuity, cause and effect, time and historical sequence, and the nature of historical evidence. For people and place, students cover the four strands of using maps, the physical environment, the human environment, and human-physical interaction. For people in society, students cover the three strands of people and needs in society, rules, rights and responsibilities in society, and conflict and decision-making in society. The program of study for Science requires students to progress through the six levels across three outcomes: earth and space; energy and forces; and living things and the processes of life. For earth and space, students cover the three strands of Earth in space, materials from Earth, and changing materials. For energy and forces, students cover the three strands of properties and uses of energy, conversion and transfer of energy, and forces and their effects. For living things and the processes of life, students cover the three strands of variety and characteristic features, the processes of life, and interaction of living things. The program of study for Technology requires students to progress through the six levels across a single outcome, technological capability. Students cover the three strands of needs and how they are met, resources and how they are managed, and processes and how they are applied. Teachers should use textbooks, supplementary materials, reference materials, literary materials, concrete materials, audiovisual materials, and computer-based materials.

Health Education is organised into one program of study. The program of study for Health Education requires students to progress through the six levels across the outcome, taking responsibility for health. Students cover the three strands of physical health, emotional health, and social health.

Information and Communications Technology is organised into one program of study. The program of study for Information and Communications Technology requires students to progress through the six levels across a single outcome, developing information and communication capability. Students cover the seven strands of using technology, creating and presenting, collecting and analysing, searching and researching, communicating and collaborating, controlling and modelling, and developing attitudes in relation to information and communications technology in society.

Modern Languages is organised into one program of study. The program of study for Modern Languages requires students to progress through the six levels across the four outcomes of listening, speaking, reading, and writing. For listening, students cover the four strands of knowing about language, listening for information and instructions, listening and reacting to others, and listening for enjoyment. For speaking, students cover the four strands of knowing about language, speaking to convey information, speaking and interaction with others, and speaking about experiences, feelings and opinions. For reading, students cover the four strands of knowing about language, reading for information and instructions, reading aloud, and reading for enjoyment. For writing, students cover the four strands of knowing about language, writing to exchange information and ideas, writing to establish and maintain personal contact, and writing imaginatively to entertain.

5.3.6 Role of Materials

5.3.6.1 Development and Evaluation

5.3.6.1.1 Primary Level

As part of contributions to the government's 5 to 14 program, review and development groups supported implementation of the National Guidelines with a range of projects to develop professional and curriculum materials. These projects produced two types of materials: exemplification materials, providing basic assistance for teachers to implement the National Guidelines in each subject area; and resource catalogues containing lists of materials suitable for supporting the National Guidelines in each subject area.

Resource catalogues were published for English Language in 1992, Mathematics in 1993, Religious and Moral Education and Expressive Arts in 1994, Environmental Studies for the components of Science, Social Subjects, Technology and Health Education in 1995, Personal and Social Development and Gaelic in 1996, and Early Years in 1998. Later, Learning and Teaching Scotland reorganised these catalogues to produce an Early Years resource catalogue, a resource catalogue covering the early years, 5 to 14 and 14 to 18 levels, and an educational software and Internet resources catalogue.

5.3.6.1.2 Secondary Level

SCCC funded twelve central support groups to coordinate the development of support materials for grades 9 and 12. These groups developed more than 1,200 packs of materials, consisting largely of print materials, but also video and audio materials, and computer programs.

The Scottish Consultative Council on the Curriculum (n.d.) reported a survey, conducted in 1992 and 1993 by face-to-face and telephone interviews, of a stratified random sample of 230 teachers from 50 schools across Scotland about their perceptions concerning the quality and usefulness of these materials. The findings indicated that high proportions of respondents were using materials in five subjects: 66 percent in English; 89 percent in Computing Studies; 94 percent in Chemistry; 91 percent in History; and 58 percent in Physical Education. It was found that teachers made less use of starter materials once they gained experience, whilst student materials were most used by respondents. In rating the usefulness of the materials, 84 percent of the respondents considered they were important, very important or essential. In rating the adequacy of coverage of their respective subjects, the respondents reported high degrees of satisfaction with the materials: 73 percent for starter materials; 75 percent for staff development materials; and 67 percent for student materials. Most respondents were satisfied with the design and presentation of the

materials, although 46 percent felt the illustrations and graphics were poor or very poor. Although both catalogues and materials were distributed through education authorities, problems were encountered with their delivery and distribution to schools. A majority of respondents indicated they lacked knowledge about the range of available materials, since 74 percent did not have access to a copy of the catalogue. On the other hand, 71 percent of respondents reported no difficulties in obtaining copies. The adequacy of coverage in the student materials received an overall rating of 65 percent, although those for Computing Studies and History were given poor ratings. The Computing Studies materials were found to lack coverage and currency. The History materials were considered too bulky, poorly organised, and presented inappropriate content for a new program involving extensive use of primary documents and local case studies.

5.3.6.2 Quality and Use

Information on the use of resources in Scottish schools is derived from data collected during inspections undertaken by HM Inspectorate of Education, an executive agency within the Scottish Executive. The data are compiled onto a central database, from which they are summarised at three-year intervals, and published in triennial reports.

On the basis of inspections of 260 primary schools and 80 secondary schools, the Scottish Office Education and Industry Department (1996) reported that the provision and use of materials in most primary and secondary schools were good or very good. The proportion of primary schools with good or very good supplies of materials was 90 percent for English Language and Mathematics, 75 percent for Environmental Studies, 85 percent for Expressive Arts, and 60 percent for Religious and Moral Education. Arrangements for obtaining materials, often through education authority resource centres, were reported to be good or very good in 85 percent of primary schools. The supply of textbooks, audio-visual equipment and microcomputers was good in almost all secondary schools with 40 percent having very good provision. Most subject departments in secondary schools made good or very good use of resources to support teaching and learning.

On the basis of inspections of over 300 primary schools and 130 secondary schools, the Scottish Office Education and Industry Department (1999) reported that the provision and use of materials in most primary and secondary schools were good or very good. Almost all primary schools were supplied well with resources across the curriculum, although there were gaps in resources for moral education, science and technology, and there was a need to extend resources for information and communication technology. The supply of textbooks and equipment had greater strengths than weaknesses in almost all secondary schools.

In the third report to cover the implementation of the National Guidelines, HM Inspectorate of Education (2001) reported on the provision and use of materials from inspections of more than 500 primary schools and 160 secondary schools. Almost all primary schools were supplied well with resources, particularly for English Language and Mathematics. In a few primary schools, there were gaps in resources for Environmental Studies, particularly in Science and Technology. Increasingly, primary schools were becoming better equipped with computer hardware. The supply of textbooks and equipment was very good or good in almost all secondary schools. Almost all subject departments in secondary schools made good use of available resources to support teaching and learning. However, in 15 percent of departments, more resources were needed to support subject developments, and in a few cases the organisation of resources needed to improve.

5.3.6.3 Information Service

5.3.6.3.1 5-14 Online

In collaboration with the National Grid for Learning Scotland, the Scottish Executive and education authorities, Learning and Teaching Scotland designed 5-14 Online. 5-14 Online was developed initially to support the implementation of the revised National Guidelines for Society, Science and Technology, Health Education, Information Communication and Technology, and the Structure and Balance of the Curriculum, but subsequently extended to support all areas in the curriculum. First launched in September 2001, 5-14 Online was relaunched with new features at the Scottish Education and Teaching with Technology exhibition held at Glasgow in September 2003. 5-14 Online includes two searchable databases contained in the classroom resources area. A database of on-line curriculum resources developed by organisations and schools across Scotland is linked to the National Guidelines. A database of reviews of computer software consisting of an overview, screen shots, installation, content, curriculum relevance, design features, and suggested improvements is linked to the National Guidelines. The reviews of computer software are produced through a partnership with software developers and a network of teachers across Scotland.

5.4 Northern Ireland

5.4.1 Historical Background

Following consultation on a proposal for reforming the educational system in Northern Ireland (Department of Education for Northern Ireland, 1988a), the Department of Education for Northern Ireland (1988b) released a policy statement to prepare the way for a major education bill. Subsequently enacted by parliament, the Education Reform

(Northern Ireland) Order 1989 reflected provisions set out in England and Wales, but also promoted education as a means for improving understanding and tolerance between communities in Northern Ireland. The legislation established the Northern Ireland Curriculum, promoted support for the integration of education for Roman Catholic and Protestant children, encouraged greater parental choice in children's schooling, and decentralised the financial management and operation of all schools and colleges to boards of governors.

5.4.2 Formation of Provincial Agencies

In order to develop, implement and monitor the Northern Ireland Curriculum and the accompanying assessment system, the Education Reform (Northern Ireland) Order created two new agencies in April 1990. The Northern Ireland Curriculum Council (NICC), an agency governed by a nineteen-member council, replaced the Northern Ireland Council for Educational Development for the purpose of advising the Department of Education for Northern Ireland about all aspects of the Northern Ireland Curriculum. The Northern Ireland Schools Examinations and Assessment Council (NISEAC), an agency governed by an eighteen-member council, replaced the Northern Ireland Schools Examinations Council for the purpose of conducting and moderating examinations and assessments.

In April 1994, the Government amalgamated NICC and NISEAC to form the Northern Ireland Council for the Curriculum, Examinations and Assessment (NICCEA) so that curriculum, examinations and assessment arrangements could be considered together. Governed by a seventeen-member council, NICCEA advises the Department of Education for Northern Ireland, publishes and distributes information relating to the curriculum, examinations and assessment, conducts statutory consultations on proposals relating to legislation, and conducts examinations and assessments, and their moderation.

5.4.3 Development and Implementation

The Education Reform (Northern Ireland) Order 1989 set out the requirements for the Northern Ireland Curriculum consisting of religious education and six areas of study: English; Mathematics; Science and Technology; Environment and Society; Creative and Expressive Studies; and Language Studies. Each area of study includes one or more compulsory or non-compulsory subjects. The Northern Ireland Curriculum also includes elements delivered as six cross-curricular themes: education for mutual understanding; cultural heritage; health education; information technology; economic awareness; and careers education. The Northern Ireland Curriculum is organised into four key stages: key stage 1 covering grades 1, 2, 3 and 4; key stage 2 covering grades 5, 6 and 7; key stage 3 covering grades 8, 9 and 10; and key stage 4 covering grades 11 and 12. Each subject incorporates three elements. Programs of study present the content and processes of each

area of study. Attainment targets provide the knowledge, skills, and understanding students are expected to achieve at the end of each key stage. Statements of attainment specify more precise objectives stated for each of ten levels.

In order to specify the elements of the Northern Ireland Curriculum, the Minister responsible for education in Northern Ireland appointed working groups to develop proposals for programs of study and attainment targets for each compulsory subject. The working groups, which presented reports within a year of appointment, completed their work in three rounds: English, Mathematics, Science, Home Economics and Irish in 1990; History, Geography and Physical Education in 1991; and Technology and Design, Art and Design, Music and Modern Languages in 1992. Following consultations within the educational community, NICC presented its recommendations for approval together with a summary of the consultations to the Minister. After approval, the Department of Education for Northern Ireland published statutory orders for each subject, and distributed them to schools across the province.

The attainment targets and programs of study were introduced progressively for each compulsory subject. For English, Mathematics, Science and Irish in Irish-speaking schools, key stage 1, 2 and 3 were introduced in 1990, and key stage 4 in 1993. For History, Geography and Physical Education, key stage 1 was introduced in 1991, key stage 2 in 1995, key stage 3 in 1991, and key stage 4 in 1994. For Technology and Design, Music, and Art and Design, key stage 1 was introduced in 1992, key stage 2 in 1996, key stage 3 in 1992, and key stage 4 in 1995. For Language Studies, key stage 3 was introduced in 1992, and key stage 4 in 1995. Pilot assessments were commenced for key stages 2 and 3 in the 1992-1993 school year, and for key stage 3 in the 1993-1994 school year.

5.4.4 First Review

In June 1993, the Minister responsible for education, Michael Ancram, announced that the curriculum at key stages 1 and 2 would be reviewed through consultation with teachers. NICC formed an advisory group, which prepared a consultation paper detailing the shape of the primary curriculum, the volume and content of the programs of study, the presentation of subject orders, time frames for the revision of subject orders, and implementation issues. The views of teachers were sought through a series of consultation conferences held in each education and library board area, and the consultation paper was circulated to schools and other organisations, which submitted responses in November 1993.

On the basis of an analysis of more than 460 written responses, the Northern Ireland Council for the Curriculum, Examinations and Assessment (1994) published a report on the

consultation presenting four key recommendations. English and Mathematics should continue to be given a substantial amount of time. Structured play and topic work should be used to lay the foundations for the development of other areas of study at key stage 1. At key stage 2, Science and Technology, and the Environment and Society should also be treated as distinct areas of study, but schools could adopt a more subject-based approach. The curriculum, however, should continue to be specified as separate areas of study with the possible exception of Technology and Design, and should be taught to most students in 85 to 90 percent of available time.

Minister Ancram announced that the curriculum at key stages 1 and 2 would continue to be broad, although it would be revised so that it could be taught to most students in 85 percent of available time. The revised curriculum would include elements of technology and design, and continue to be specified by programs of study and attainment targets covering levels 1 to 3 at key stage 1 and levels 1 to 5 at key stage 2. Subject orders for key stage 3 would also be revised to take account of the proposed changes at key stages 1 and 2.

Areas of study groups, under the direction of key stage overview groups and supported by a Special Educational Needs Advisory Group, revised the subject orders between September 1994 and February 1995. Following a series of information conferences for teachers, the proposals for the revised subject orders were distributed to schools for consultation in March 1995. Area of study and key stage overview conferences were held in education and library board areas between April and June of 1995 to consult teachers about the proposals. Analysis of the responses, undertaken between July and October of 1995, led to the development of subject and key stage recommendations, which were incorporated in a report sent to Minister Ancram in November 1995. In January 1996, Minister Ancram accepted the recommendations for revised subject requirements at all key stages. The revised orders were implemented in all primary schools in September 1996.

Following advice from NICCEA, the Minister announced new requirements for key stage 4 in June 1994. The curriculum at key stage 4 would continue to be defined through religious education, subjects from each of the six areas of study, and the six cross-curricular themes. Courses offering different methods of assessment and types of accreditation would be made available, attention would be given to providing suitable courses to students for whom GCSE was inappropriate, and reporting and assessment would not be based on the ten-level scale. The amount of minimum classroom time for the new requirements was reduced to between 60 and 62.5 percent, allowing schools more flexibility in providing additional elective programs. The new requirements were implemented progressively between September 1994 and September 1996.

5.4.5 Revised Northern Ireland Curriculum

In February 1996, the Minister approved the revised programs of study and attainment targets, which led to new statutory orders being distributed to schools for implementation from September 1996. Each of the new statutory orders, published by the Department of Education for Northern Ireland (1996), consists of two parts: a program of study; and attainment targets. The first section of each program of study presents statements on the characteristics of the curriculum at the particular key stage, and for using the program with reference to its access to all students, the role of language across the curriculum, and equality of opportunity for all students. In the second part, descriptions of four to eight levels are provided for attainment targets at each key stage.

English is organised into three programs each consisting of three sections: talking and listening; reading; and writing. At key stage 1, students learn to structure and sequence their talk and listen with increasing concentration in a range of contexts, read with understanding, and write with some independence in a variety of forms. At key stage 2, students learn to talk with confidence and listen with concentration in particular situations and for specific purposes, read a range of texts with awareness of meaning and structure, and write with clarity in a range of forms. At key stages 3 and 4, students learn to talk and listen in a range of situations and to different audiences, read and respond to texts with appreciation and imagination, and write coherently using a varied vocabulary capable of expressing complex ideas. In key stage 1, teachers should use stories, poems, songs, nursery rhymes, plays, picture books, informational materials, everyday texts and audiovisual materials to develop reading skills. In key stage 2, teachers should use stories, poems, songs, plays, guidebooks, textbooks, reference materials, teletext, databases and audiovisual materials emphasising works written by local Irish authors to develop reading skills. In key stages 3 and 4, teachers should use stories, poems, plays, diaries and biographies written by local Irish authors, guidebooks, textbooks, reference materials, everyday texts, television and radio programs, films and videotapes, CD-ROMs and other electronic media to develop reading skills.

Mathematics is organised into three programs. The key stage 1 program consists of five sections: processes in mathematics; number; measures; shape and space; and handling data. Students begin to learn mathematical processes, count numbers, understand measures, explore shapes, and sort objects through practical activities within their immediate environment. The key stage 2 program consists of five sections: processes in mathematics; number; measures; shape and space; and handling data. Students learn complex mathematical processes, understand number notation, patterns and sequences, operations and money, develop measuring skills, explore features of shapes, collect, represent and interpret data and become familiar with probability. The key stages 3 and 4 program

consists of five sections: processes in mathematics; number; algebra; shape and space; and handling data. Students learn complex mathematical processes, distinguish between rational and irrational numbers, begin algebra, understand the concepts of congruence and similarity, understand transformations of shapes, distinguish between formulas for length, area and volume, represent, analyse and interpret data from tables, and calculate probability. Where appropriate, students in key stage 4 should be provided with extension material to apply their knowledge, understanding and skills to solve complex problems in a wide range of contexts in each of the five sections. In key stage 1, teachers should use concrete materials to develop mathematical understanding and skills, and calculators and computers to understand how they work. In key stage 2, teachers should use a wide variety of materials, games and tools to develop mathematical understanding and skills, and calculators and computer databases to process information and computer programs to create mathematical shapes. In key stage 3, teachers should select and use a wide variety of materials, instruments and games to develop mathematical understanding and skills, and computer programs to create spreadsheets and databases.

In the Science and Technology area of study, Science and Technology form composite programs for key stages 1 and 2, but are organised into separate programs for key stages 3 and 4. The composite programs for key stages 1 and 2 require students to engage in two sections, each consisting of three strands. Investigating and making in science and technology consists of planning, carrying out and making, and interpreting and evaluating. Knowledge and understanding of science and technology consists of living things, materials, and physical processes. At key stage 1, students explore and make observations about living things, use a range of materials, and explore physical processes. At key stage 2, students learn about a wider range of living things, materials and physical processes, explore phenomena methodically, and conduct systematic investigations. In key stages 1 and 2, teachers should use books, charts, pictures, television and radio programs, video resources, as well as computers to prepare a database.

The key stages 3 and 4 programs for Science require students to engage in four sections: experimental and investigative science; living organisms and life processes; materials and their uses; and physical processes. At key stage 3, students develop experimental and investigative skills, investigate the effects of variation, environment and living processes on living organisms, understand physical properties, chemical reactions and kinetic theory, and investigate physical processes relating to energy, electricity and magnetism, sound and light, and Earth in space. The key stage 4 programs for Single Science and Double Science cover similar subject matter at varying depths. Students apply scientific and technological knowledge and ideas, learn about a wide range of scientific ideas, and apply a range of approaches to carry out investigations to examine life processes and living things, materials

and their properties, and physical processes. In key stages 3 and 4, teachers should select and use a wide range of materials, as well as using computers to store, process, retrieve and present information.

Technology and Design is organised into a program for key stage 3, and an outline program for key stage 4. At key stage 3, students learn to communicate, plan, appraise and manufacture products using a range of materials, and investigate and build electronic and mechanical control systems. At key stage 4, an outline program presents guidelines for organising Technology and Design courses.

History is organised into programs for key stages 1, 2 and 3, and an outline program for key stage 4. At key stage 1, students begin to apply historical skills and concepts to learn about their personal histories, personalities, events and celebrations, and a topic treating an historical theme or period. At key stage 2, students develop historical skills and concepts to represent and interpret events, people and places, and change and continuity across various perspectives. The scope covers three units, each of which comprises several topics. The latter topic in each unit provides alternatives dealing with either a local dimension of the period, a topic linked to the period, a topic of the teacher's choice unrelated to the period, or a local study of the teacher's choice unrelated to the period. In the first unit, students learn about life in early times in Ireland through the study of three topics: Middle Stone Age; New Stone Age; and the alternatives referring to life in early times. In the second unit, students learn about Viking society in Scandinavia and its impact on Ireland through the study of three topics: Viking way of life at home; Viking expansion and settlement abroad; and the alternatives referring to the Viking way of life. In the third unit, students learn about life in Victorian times through the study of two topics: Victorian life in town and country; and the alternatives referring to life in Victorian times. At key stage 3, students apply historical skills and concepts to make links and connections across periods by learning a broad outline and being given opportunities to examine one case study in each of six units. The breadth of study covers the Normans and the medieval world, rivalry and conflict and its impact on Ireland in the seventeenth century, union and partition of Ireland from 1800 to 1922, and the twentieth century world through the impact of world war. Two units of the school's own choice focus on the local area or a local development, an historical theme over time, a significant era or turning point in history, or a past European or non-European society. At key stage 4, an outline program presents guidelines for organising History courses. In key stage 1, teachers should use stories, plays, photographs, radio and television, and students should use simple computer databases to enter information. In key stage 2, teachers should use pictures, photographs, and printed documents, and students should use computers to enter and present information in a

database. In key stage 3, teachers should use a wide range of materials, including computer databases, simulations, spreadsheets, and graph plotting programs.

Geography is organised into programs for key stages 1, 2 and 3, and an outline program for key stage 4. At key stage 1, students begin to apply geographical skills to learn about homes and buildings, jobs and transport, weather, and the natural environment in their local community and the wider world. At key stage 2, students develop geographical skills to learn how weather, where people live and what people do, and the environment affect the lives of people in different places. At key stage 3, students apply geographical skills to investigate how rocks and processes of landscape development, weather and climate, and ecosystems affect physical environments, and population, settlement and economic activities affect human environments. At key stage 4, an outline program presents guidelines for organising Geography courses. In key stage 1, teachers should use stories, pictures, photographs, books, maps, and audiovisual materials, and students should use computer adventure games, simulations, remote control toys, and simple databases to enter information. In key stage 2, teachers should use books, photographs, slides, videos, broadcast materials, computer databases, simulations and remote control toys. In key stage 3, teachers should use a wide range of materials, including computer databases, simulations and spreadsheets.

Business Studies, Economics, Political Studies, Home Economics, and Social and Environmental Studies are organised into outline programs for key stage 4. The outline programs present guidelines for organising courses in these subjects.

Physical Education is organised into four programs. At key stage 1, students develop skills in movement and coordination in dance and gymnastics, and play in small groups in competitive games. At key stage 2, students develop skills and apply them to more complex challenges in five areas of activity: athletics; dance; games; gymnastics; and swimming. At key stage 3, students develop skills and apply them to progress towards more adult forms of activity and cope with increased physical demands in five areas of activity: athletics; dance; games; gymnastics; and swimming. At key stage 4, students decide on which areas of activity to be involved, the roles that suit them best, and extend their involvement in exercise and activity out of school in three of seven areas of activity. These areas are athletics, dance, two games, gymnastics, swimming, or out-door education. The order identifies that at each key stage teachers may use traditional rhymes, poems, and stories to perform movement to stimuli through dance.

Art and Design is organised into programs for key stages 1, 2 and 3, and an outline program for key stage 4. At key stage 1, students explore and develop ideas, and

investigate a range of materials. At key stage 2, students investigate and realise art and design activities by using an extended range of materials, reviewing their work, developing an understanding of visual elements, and becoming familiar with a range of art, design and craft works. At key stage 3, students investigate and realise art and design activities by using a wide range of materials, combining the visual elements, making critical comments, and engaging with different styles of art, craft and design in the contemporary world and from different times and cultures. At key stage 4, an outline program presents guidelines for organising Art and Design courses. The order identifies that at each key stage teachers should use books, prints, photographs, slides, videos and CD-ROMs to view and experience the work of artists, craftspeople and designers.

Music is organised into programs for key stages 1, 2 and 3, and an outline program for key stage 4. At key stage 1, students begin to compose simple sounds, perform by singing and playing simple instruments, and appreciate simple music making. At key stage 2, students improvise and compose short pieces of music, perform by singing and playing instruments, and appreciate music making. At key stage 3, students create arrangements and compose original music in finished forms, interpret and perform a variety of music in ensemble involving rehearsing and directing group performances, and appraise a wide variety of music from different periods, styles and cultures. At key stage 4, an outline program presents guidelines for organising Music courses.

Drama is organised into an outline program for key stage 4. The outline program presents guidelines for organising Drama courses.

Modern Languages consist of two programs for Irish at key stages 1 and 2, and a single program for French, German, Italian, Spanish and Irish at key stages 3 and 4. At key stage 1, students develop skills in listening, understanding and talking in Irish, and begin to read and write in Irish. At key stage 2, students extend skills in listening, understanding and talking in Irish, and develop reading and writing skills in Irish. At key stages 3 and 4, students develop personal and social skills, language-learning skills, and an awareness of the culture in the community of the target language. At key stage 3, students study several topics from three contexts: everyday activities; personal life and social relationships; and the world around us. At key stage 4, students study in greater depth several topics from five contexts: everyday activities; personal life and social relationships; the world around us; the world of work; and the international world. The order identifies that at each key stage teachers should use authentic materials to develop cultural awareness, and printed texts and reference materials to develop language skills.

5.4.6 Second Review

5.4.6.1 Curriculum Review

Although the Department of Education for Northern Ireland pledged not to make changes to the revised Northern Ireland Curriculum for five years, it commissioned NICCEA to seek the views of the educational community on prospective changes that should be made to curriculum and assessment after that date. NICCEA employed three strategies to conduct this review.

First, it contracted NFER to undertake the Northern Ireland Curriculum Cohort Study, an evaluation of the coherence of the curriculum experienced by students at key stage 3. Building on a sixteen-month pilot study conducted in five secondary schools, the study identified students' perceptions about the relevance and appropriateness, balance and coherence, and enjoyment and manageability of the Northern Ireland Curriculum. Two methods were employed to collect data over a three-year period from 1996 to 1999. Questionnaires were administered annually in 51 secondary schools to 10 percent of all key stage 3 students to rate their perceptions about various aspects of the Northern Ireland Curriculum and its assessment, and to school administrators to determine the organisation of the curriculum in each school. Case studies were also conducted in five schools over the three-year period to provide detailed evidence about the attitudes of small groups of students. The main outcome of the study was the publication of a series of reports analysing data from the two methods (Harland et al., 1999a, Harland et al., 1999b), and a final report presenting the major findings (Harland et al., 2002). The major findings referred to seven key issues. First, very few schools were meeting the recommended minimum times for all subjects. Second, students were generally unaware of any coherence across courses offered by schools. Third, students' motivations were stimulated by key stage 3 tests, but assessment had a deleterious effect on the balance and relevance of the curriculum. Fourth, students' perceptions of relevance became more associated with the academic and utilitarian currency of subjects for a career as they progressed through key stage 3. Fifth, manageability decreased in grades 9 and 10 as students reported feeling overworked in Modern Languages and Mathematics. Sixth, virtually all subjects showed a decline in enjoyment over the three years of key stage 3. Seventh, students requested more cross-curricular themes, when they were provided.

Second, NICCEA monitored the implementation of the Northern Ireland Curriculum and its assessment by undertaking a three-stage process. Between October and December of 1997, a representative sample of schools provided information on curriculum and assessment, from which a report summarising the findings was produced. Over the same period, representatives from education and library boards, the Council of Catholic Maintained Schools, representatives from other groups, and the general public responded

to the review, from which a questionnaire was developed. The questionnaire was administered in April 1998 to all schools in the province, the data collected from the survey were analysed, and a report highlighting the key issues was produced in June 1998.

Third, NICCEA convened a series of ten Curriculum 21 conferences between February 1998 and February 1999 to discuss some of the key priorities to be considered in connection with the review of the Northern Ireland Curriculum.

In January 1999, NICCEA presented advice to the Minister responsible for education based on the findings of the review. It proposed revising the Northern Ireland Curriculum by clarifying the curriculum aims and values, increasing progression of skill development, improving curriculum relevance and enjoyment for all learners, providing greater balance, coherence and flexibility at each key stage, aligning assessment mechanisms with curriculum aims, and developing strategies for managing future change. The consultation proceeded over three phases with the intention that changes to the Northern Ireland Curriculum would be implemented over several years commencing in September 2005.

The first phase, undertaken from May to October of 2000, involved schools and other institutions submitting 426 responses to a questionnaire survey following meetings with representatives of schools, business, and community organisations. The respondents supported refining the aim, objectives, values, skills and access statement, improving the balance, coherence and flexibility at key stages 1 and 2, and developing a program for Personal Development at key stage 2. A Working Group drew up the proposals for the curriculum between the autumn of 2000 and the summer of 2001.

The second phase, undertaken from April 2002 to September 2003, involved public meetings, seminars with teachers and community members, and a questionnaire survey to which 802 responses were received from post-primary and special schools, and other organisations. Analysis of the responses led NICCEA to propose establishing a foundation stage, reorganising some subjects in key stage 2 under new areas of study, conducting a separate consultation on more detailed proposals for key stage 3, and undertaking further informal consultation on the content for key stage 4. In April 2003, NICCEA advised the Minister responsible for education that the framework for key stage 4 should consist of four elements: Transferable Skills; Personal, Social and Health Education; Citizenship; and Learning for Work.

In March 2003, NICCEA proposed that the curriculum for key stage 3 should consist of two components. First the new area of study, Learning for Life and Work, should consist of education and employability, local and global citizenship, and personal development.

Second, eight general areas of study covering the Arts, English and Irish, Environment and Society, Mathematics, Modern Languages, Physical Education, Science and Technology, and Religious Education should be constructed. The third phase, undertaken from September to November of 2003, involved consultation on the proposals for key stage 3. NICCEA held a series of forums for teachers, education providers, and employers and the community to provide the basis for advice presented to the Minister responsible for education in December 2003.

5.4.6.2 Review of Post-Primary Education

In 1998, the Minister responsible for education, Tony Worthington, commissioned research into the effects of the selective system of education, which highlighted serious weaknesses. In September 2000, the Minister responsible for education, Martin McGuinness, appointed the ten-member Review Body on Post-Primary Education to examine the selective system of secondary and grammar schools in Northern Ireland, and to address the appropriate structures for post-primary education, including implications for the curriculum. The Review Body held 25 public meetings, met with representative groups, held open days for schools in Armagh, Londonderry and Belfast, collected over 2,000 written submissions, and undertook study visits to schools and education organisations in Austria, the Netherlands, Republic of Ireland and Scotland. At the end of this process, an education consultative forum of representatives from interest groups was convened by the Review Body to reach conclusions about the future organisation of post-primary education.

In its report on the consultation, the Department of Education for Northern Ireland (2001a) made five proposals, as well as recommendations in relation to the curriculum. First, a set of 12 principles should underpin the education system. Second, the eleven-plus transfer tests should be abolished and replaced by a procedure giving priority to parental choice. Third, academic selection should be ended. Fourth, a pupil profile should be developed to inform parents, students and teachers about a wide range of attributes and achievements of children as they progress through their education. Fifth, local collaborative networks of schools should be created through a system of collegiates.

In October 2001, the Department of Education for Northern Ireland presented the proposals for an eight-month review by the province's community involving five activities. Minister McGuinness held 28 meetings with interest groups. Churches, institutions of further and higher education, and voluntary and community groups submitted 1,300 responses. Detailed response booklets issued to all schools and other education providers were returned by 510 institutions. Household response forms sent to residents across the province led to the submission of more than 200,000 responses. Views of young people were sought through focus groups.

In its report on the consultation, the Department of Education for Northern Ireland (2002) found that there was widespread acceptance of the need for change and support for the post-primary arrangements. However, there was little support for the Review Body's model in its entirety, although there was consensus about its guiding principles, the abolition of the transfer tests, and the development of the pupil profile. The predominant view was that academic selection should end, but there was little support for the proposed admission criteria and for forming collegiates. In June 2003, the Minister responsible for education, Jane Kennedy, appointed a Working Group to recommend options for future arrangements for post-primary education in November 2003.

In June 2004, the Minister responsible for education, Barry Gardiner, announced the way forward for post-primary education, which would focus on the new curriculum proposals, the Entitlement Framework, the implications for collaboration between schools and further education, and the development of specialist schools. The Minister accepted the advice from NICCEA on the curriculum. At key stages 1 and 2, the new curriculum would consist of seven general learning areas: Creative, Expressive and Physical Development; Language and Literacy; Mathematics and Numeracy; Personal Development; the World around Us; Physical Education; and Religious Education. At key stages 3 and 4, the new curriculum would consist of Learning for Life and Work and eight general learning areas: the Arts; English and Irish; Environment and Society; Modern Languages; Mathematics; Science and Technology; Physical Education; and Religious Education. The new, reduced curriculum for key stage 4 would provide flexibility for students to choose from a greater range of courses envisaged under the Entitlement Curriculum, offering access to a guaranteed minimum number and range of courses. Schools would provide this range of courses in collaboration with neighbouring schools and further education colleges. A new feature of the post-primary arrangements would allow schools to specialise by developing their own distinctive approaches to the curriculum by becoming centres of excellence, and sharing this expertise with neighbouring schools.

5.4.8 Role of Materials

5.4.8.1 Approval

NICCEA administers the GCSE, GCE, the Certificate of Education Achievement, and the General National Vocational Qualifications for schools, colleges, institutions of higher education, and other education providers in Northern Ireland.

NICCEA adopts a multiple number of approved materials for the list of literary texts for GSCE and GCE English Literature, and identifies from materials in use multiple numbers of recommended materials for lists in all other GCE and GSCE specifications.

5.4.8.2 Quality and Use

Information on the use of curriculum resources in Northern Ireland schools is derived from data collected during inspections undertaken by the Northern Ireland Education and Training Inspectorate.

A series of subject reports on English, Mathematics and Science, covering the first year of full implementation of the original Northern Ireland Curriculum, identified problems relating to the provision and use of resources in a sample of 30 secondary schools. The Department of Education for Northern Ireland (n.d.a) reported that provision of resources for English was satisfactory in more than four-fifths of the schools, but that the absence of effective selection policies in some schools led to inequality between purchases of textbooks and supplementary reading materials. The Department of Education for Northern Ireland (n.d.b) reported that whilst the provision of materials for Mathematics was satisfactory in most schools, more than one-third of the schools relied on a single textbook. The Department of Education for Northern Ireland (n.d.c) reported that about a quarter of schools had significant shortages of materials and equipment for Science, but that sufficient copies of textbooks were available for the senior secondary level, although textbook shortages existed in about two-fifths of junior and intermediate secondary grades.

A second series of reports covering the six areas of study over the period between 1991 and 1994 identified problems relating to the provision and use of resources in a sample of 116 secondary schools. The Department of Education for Northern Ireland (n.d.d) reported that the provision of printed and audio-visual materials for English was satisfactory in almost all the schools. The Department of Education for Northern Ireland (n.d.e) reported that the provision of resources for Mathematics was satisfactory or better in four-fifths of the schools with most schools moving away from dependence on a single textbook to using worksheets obtained from various sources. The Department of Education for Northern Ireland (n.d.f) reported that although the provision of resources for Science, Technology and Design and Home Economics was satisfactory in most schools, the use of printed materials was often ineffective. The Department of Education for Northern Ireland (n.d.g) reported that the provision of resources for business-related subjects, Geography and History was satisfactory or better in most schools, although difficulties had been experienced with the lack of availability of suitable textbooks for History before 1991. The Department of Education for Northern Ireland (n.d.h) reported that the provision of resources and equipment for Creative and Expressive Studies was poor in many schools.

The Department of Education for Northern Ireland (n.d.i) reported that the provision of textbooks for Language Studies was satisfactory in most schools.

The Department of Education for Northern Ireland (2001b) reported on the basis of inspections of virtually all 940 primary schools in Northern Ireland as well as 296 secondary schools that the provision and use of materials in most schools was satisfactory or good. The range of resources to support learning was satisfactory or good in over 80 percent of primary schools. Whilst there was not a great disparity in the quality of materials from subject to subject, Science was generally well resourced, but resources for Geography and History were often insufficient. In almost 15 percent of primary schools, there were significant weaknesses in the supply and use of resources, characterised by inadequate computer hardware and software, a preponderance of unchallenging textbooks, lack of storage space, or poorly used materials. Most secondary schools had a wide range of resources, which were used well to support learning. In a minority of schools, the available resources were not used systematically to promote learning, or were not easily accessible.

5.5 Conclusion

The evidence suggests that curriculum reforms dominated educational reform in the United Kingdom. In 1988, the Conservative government mandated a prescriptive National Curriculum for schools in England and Wales, which was developed by national curriculum agencies with little consultation with the educational community. Within the scope of the National Curriculum, provision was made for the cultural and linguistic heritage of the Welsh with the development of the Curriculum Cymreig. However, policy-makers had realised by 1993 that the imbalance between the demands set through centralised directives for implementing the National Curriculum orders and the limited provisions for local initiatives were impeding its implementation. Through an extensive process of public consultation, the review of the National Curriculum for England and Wales undertaken in 1993 and 1994 led to a reduction in the prescriptive content. Following the election of the Labour government in May 1997, limited revisions of the National Curriculum undertaken separately in England and Wales further reduced the prescriptive content, but added new elements. Comparison of the two sets of revised orders indicates that a separate National Curriculum had emerged for Wales. In 1989, the Conservative government mandated the Northern Ireland Curriculum, which was developed through an authoritative process very similar to that employed in England and Wales. Similarly, the review of the Northern Ireland Curriculum undertaken between 1993 and 1995, which employed extensive consultation with the educational community, led to a reduction in its prescriptive content, although not to the same extent as in England and Wales. Again, limited revision of the Northern Ireland Curriculum undertaken from 2000 to 2003 further reduced the prescriptive content, but added new elements. On the other hand, organisations in Scotland developed a common curriculum entirely through a process of extensive consultation with the educational community, and implemented the National Guidelines voluntarily without statutory legislation.

The working groups responsible for developing the programs of study outlined in the National Curriculum for England and Wales and the Northern Ireland Curriculum specified particular types of materials considered appropriate for students in each of the four key stages. Similarly, the review and development groups responsible for developing the programs of study outlined in the National Guidelines for Scotland specified particular types of materials considered appropriate for students in each of the four key stages. The specification of particular types of materials in the programs of study reinforced the rationale used by national curriculum agencies and publishers to investigate the relationship between the curriculum and the resources needed to support it. The lobbying of policy-makers by interest groups, particularly in England, to investigate this relationship, seems to have been stimulated by the effects of the hasty production of new materials to meet the needs of an expeditiously implemented National Curriculum.

Officials from national curriculum agencies together with publishers applied a range of research methodologies to investigate particular aspects associated with the use of materials by teachers and students in the different subjects of the National Curriculum. The research study undertaken by national curriculum agencies in collaboration with publishers represented the first, significant effort in the United Kingdom to examine the quality of resources, their impact in schools, and the need to improve selection procedures.

Data, indicating that the provision of materials was inadequate in many schools, supported the findings of this research study. Agencies responsible for providing independent inspections of schools across the United Kingdom collect data on standards of achievement, the quality of education in schools, and a wide range of other issues, including the provision of materials in schools. OFSTED in England, Her Majesty's Inspectorate for Education and Training in Wales, HM Inspectorate of Education in Scotland, and the Northern Ireland Education and Training Inspectorate provide consistent coverage of data on the provision and use of materials in schools. These data have highlighted severe shortages of materials in schools, particularly in England.

BECTA's Educational Software Database, Curriculum Online provided by the Department for Education and Skills, the TEEM project maintained by the Centre for Research in Educational ICT, and 5-14 Online provided by Learning and Teaching Scotland represent conventional applications of information systems for collecting, storing and disseminating information on materials. Since the features of information systems are well understood by information specialists, they were able to apply elements from the planned change model in flexible and limited ways to design these databases. The planned change process involved researching the theoretical basis for change, developing a repository of information on materials through invention, design, construction and assembly, diffusing the information through dissemination and demonstration, and adopting the information through training, trial, installation and institutionalisation. These information systems exhibited the key features of the planned change model by transforming from probing and exploratory exercises in the early stages to rigorous engineering and market research investigations in the later stages.

The development of on-line materials through BECTA's Teacher Resource Exchange reflected an innovative activity for inventing, testing and diffusing new solutions in applying the Internet to enable teachers to develop their own on-line materials in flexible formats, and allow them to reconfigure them to suit specific teaching requirements. Curriculum developers and information specialists applied the planned change model to design the novel features of this information system. The planned change process involved researching the theoretical basis for change, developing a repository and the on-line

materials through invention, design, construction and assembly, diffusing the on-line materials through dissemination and demonstration, and adopting the on-line materials through training, trial, installation and institutionalisation. The Teacher Resource Exchange exhibited the key features of the planned change model by transforming from a probing and exploratory exercise in the early stages to a rigorous engineering and market research investigation in the later stages.

CHAPTER 6

NATIONAL STANDARDS-BASED REFORM IN THE UNITED STATES

The movement for educational reform, which occurred first in the United States, was an outcome of the public debate on social, economic and political issues ensuing from the release of a report by Peters and Waterman (1982). Extended to the education sector, this debate resulted in a spate of national studies on excellence in education, following the release of the report of the National Commission on Excellence in Education (1983). Generally, the reports of these studies were critical of the poor quality of public education, recommending a variety of strategies to reform education, particularly at the secondary level. Two waves of reforms during the 1980s effected improvements through small-scale school reform projects and by decentralising decision-making authority to local communities, but failed to bring about national education reform. Convened by President George H. W. Bush in September 1989, the Charlottesville Education Summit transformed the educational reform movement by establishing six National Education Goals, which provided the foundation for defining national standards based in academic disciplines. The process applied by policy-makers to determine national standards, reflecting a 'thinking curriculum' in terms of academic rigour, involved national subject associations developing content, performance and opportunity-to-learn standards for particular subject areas largely independent from the work of other subject-based groups. This situation contrasted markedly with those processes applied in the United Kingdom and Australia.

The purpose of this chapter is to examine the impact of standards-based reform on the system for developing, selecting and using resources in the materials' marketplace in the United States. An assumption underlying this rationale is that the development, selection and use of resources are dependent on the processes and products of standards-based reform. Although federal agencies are not responsible for developing and selecting the resources used in American schools, this chapter is intended to identify how the context of standards-based reform has impinged on these agencies acquiring a role in determining the development, selection and use of resources.

6.1 Historical Background

6.1.1 'First Wave' Reforms

The 'first wave' of reforms occurred through a variety of initiatives, which can be categorised into three basic dimensions: state mandates; regional and local movements; and conversations about reform (Timar and Kirp, 1989). The first dimension was characterised by the efforts of the states to consolidate their control over local school districts through

widespread use of several new forms of educational management. These included the use of standardised testing programs to determine educational outcomes, the use of curriculum alignment, a procedure devised to establish congruences between objectives, textbooks and tests to ensure that content tested has been taught, and the use of criteria to evaluate the performances of teachers. The second dimension strengthened local and professional control through three main measures. First, institutions of teacher education, collaborating as the Holmes Group, prepared teachers professionally, and a National Board of Professional Teaching Standards was established in 1987 to set standards for professional certification of teachers. Second, school reform projects, such as James Comer's School Development Program, TheodoreSizer's Coalition of Essential Schools, John Goodlad's National Network for Educational Renewal, the College Board's Educational Equity Project, and the National Education Association's Mastery in Learning Project, endeavoured to restructure the roles and responsibilities of schools. Third, policy-makers promoted a multiplicity of local initiatives, reported by the United States Department of Education (1984), to reform local school districts through school improvements, mastery learning, teaching projects, and so forth. The third dimension, conversations on reform, refers to the changes in rhetoric on schooling used by policy-makers, administrators and teachers. Although rhetoric affected the attitudes and actions of such groups and made a substantial impact on the outcomes of the reform movement, its effects are difficult to assess.

6.1.2 'Second Wave' Reforms

The character of the educational reform movement shifted during the mid-1980s from an emphasis on improving student and teacher performances through state regulations that relied on the executive roles of bureaucracies for enforcement and control to redesigning governance structures. The failure of centralised state bureaucracies to impose excellence on schools was recognised in the report of the National Governors' Association (1986) on the work of its seven task forces on teaching, leadership and management, parent involvement and choice, readiness, technology, school facilities, and college quality. By presenting a five-year plan for the states, the report provided the thrust for decentralising decision-making authority in the reform movement. Decentralising decision-making authority to various groups and individuals led to the shift of reform efforts into several new directions. First, the responsibilities of school boards were reallocated. Second, marketplace incentives were used to improve the quality of schooling. Third, attention was given to culture, social climate, and leadership role in restructuring schooling. Fourth, parental choice in public schooling was increased.

6.2 Charlottesville Education Summit

Having pledged in the election campaign of 1988 to hold an education meeting, President George H. W. Bush was pressured by the National Governors' Association to invite the governors to an education summit. Convened at Charlottesville, Virginia, in September 1989, the education summit involved the President and the fifty state governors considering ways of bringing about changes in the educational system that would make the United States internationally competitive by the year 2000. They reached agreement to establish a process for setting national education goals, seeking greater flexibility and accountability in using federal resources to meet the goals, undertaking a state-by-state effort to restructure the educational system, and reporting annually on progress in achieving the goals (Vinovskis, 1999). Following the summit, the National Governors' Association Task Force on Education worked with presidential designees to develop and recommend to the president and the governors six National Education Goals to be achieved by the year 2000.

Promulgated in February 1990, the six National Education Goals became the foundation for America 2000.

The National Education Goals

1. *By the year 2000, all children in America will start school ready to learn.*
2. *By the year 2000, the high school graduation rate will increase to at least 90 percent.*
3. *By the year 2000, American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our Nation's modern economy.*
4. *By the year 2000, United States students will be first in the world in science and mathematics achievement.*
5. *By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.*
6. *By the year 2000, every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.*

6.3 America 2000

6.3.1 America 2000 Excellence in Education Act

In December 1990, President George H. W. Bush forced his ineffective Secretary of Education, Lauro Cavazos, to resign, replacing him with Lamar Alexander, a former governor of Tennessee. Chosen to promote Bush as the 'Education President', Alexander presented a blueprint for America 2000, the national strategy intended to accomplish the National Education Goals, soon after taking office. In April 1991, President Bush announced America 2000, and legislation in the form of the America 2000 Excellence in Education Act was introduced into Congress in May under nine titles.

The first, New American Schools supported the creation of new schools, which would employ the best teaching and learning processes, and use high quality materials and technologies. The second, Merit Schools, supported recognition and rewards for schools making progress towards attaining the National Education Goals, particularly in relation to the five core academic subjects. The third, Teachers and School Leaders, was intended to build a high quality teaching force by providing funds for improving professional leadership. The fourth, Educational Reform and Flexibility, promoted educational reform that would lead to improved educational outcomes for participants in affected programs by increasing the flexibility of resources available to schools. The fifth, Parental Choice of Schools, aimed to provide funds to conduct and demonstrate nationally significant model programs of educational choice, and payments to parents to purchase their children's participation in programs of educational choice. The sixth, National Assessment of Educational Progress, detailed amendments to the National Assessment for Educational Progress (NAEP) for it to be used to collect data related to America 2000. The seventh, National Commission on Time, Study, Learning and Teaching, formed a nine-member commission to examine the quality and adequacy of study and learning time for students in American schools. The National Education Commission on Time and Learning (1994) recommended reinventing schools around learning, using time in new and better ways, establishing an academic day, keeping schools open longer, giving teachers the time they need, investing in technology, developing local action plans, and transforming learning through individual responsibility. The eighth, Regional Literacy Resource Centres supported state and local, public and private efforts for funding regional literacy resource centres intended to facilitate literacy services. The ninth, General Provisions, defined terms used in the Act.

Subsequently, the United States Department of Education (1991) published a description of America 2000, stating that its four tracks would be served by specific goals. Better and more accountable schools would be promoted by encouraging communities to measure and compare results using a range of strategies. Located in each congressional district, 535 New American Schools, to be selected by the New American Schools Development Corporation (NASDC) and financed at \$1 million each from public funds, would be created by 1996.

Educational opportunities would be provided for adults with proposals to encourage business and union leaders to establish voluntary job-related skill standards and accompanying certificates, assessment and referral skill clinics on work sites, and to convene a National Conference on Education for Adult Americans. America 2000 communities would be established to renew community involvement by employing community-wide strategies to achieve the National Education Goals.

6.3.2 Professional Responses

Soon after the inception of America 2000, a number of analysts examined its substance, either supporting or criticising the adequacy of the strategy. In the most important of these analyses, the Institute for Educational Leadership and the William T. Grant Foundation (1991) asked 30 education leaders, evaluators and observers to assess America 2000. Their collected papers, were generally critical of the America 2000 strategy in terms of five themes: reinventing the schools; teaching and testing; poverty and diversity; lessons from the past; and a nation of students.

6.4 Goals 2000

6.4.1 Goals 2000: Educate America Act

Following election in November 1992, President William Clinton appointed Richard Riley, a former governor of South Carolina as Secretary of Education in January 1993. After announcing in March that the Clinton administration had renamed the national education reform effort, Secretary Riley introduced legislation for the Goals 2000: Educate America Act into Congress in April under ten titles.

The first, National Education Goals revised and codified the original six National Education Goals, and added two new goals. The second, National Education Reform Leadership, Standards and Assessments established the National Education Goals Panel in law, created the National Education Standards and Improvement Council, and provided grants to education organisations to support development of standards-based assessment systems. The third, State and Local Education Systemic Improvement provided grants to states to support, accelerate and sustain efforts in standards-based reforms. The fourth, Parental Assistance provided grants to create parent information and resource centres. The fifth, National Skill Standards Board created a National Skill Standards Board to promote the development and adoption of a voluntary national system of occupational skill standards and certification. The sixth, International Education Program provided grants and contracts for organisations to study international education programs and delivery systems, and offer an international education exchange program. The seventh, Safe Schools provided grants for local education agencies to carry out projects to achieve Goal 7. The

eighth, Minority-Focused Civics Education provided grants for organisations to develop and implement in-service education programs for teachers and students from minority ethnic groups. The ninth, Educational Research and Improvement established the National Educational Research Policy and Priorities Board to determine the policy and priorities of the Office of Educational Research and Improvement. The tenth, Miscellaneous, presented a number of miscellaneous provisions.

The National Education Goals

2. *By the year 2000, all children in America will start school ready to learn.*
2. *By the year 2000, the high school graduation rate will increase to at least 90 percent.*
3. *By the year 2000, American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our Nation's modern economy.*
4. *By the year 2000, the Nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century.*
5. *By the year 2000, United States students will be first in the world in science and mathematics achievement.*
6. *By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.*
7. *By the year 2000, every school in the United States will be free of drugs, violence and the unauthorised presence of firearms and alcohol and will offer a disciplined environment conducive to learning.*
8. *By the year 2000, every school will promote partnerships that will increase parental involvement and participation in the social, emotional, and academic growth of children.*

6.4.2 Political Responses

Riley (1995) reported that the debate in Congress over the Goals 2000 legislation focused on three issues. The first involved defining a role for the federal government in promoting improvement through educational reform. The second involved confrontation over opportunity-to-learn standards, which were opposed by legislators because they provided scope for the federal government to impose mandates on the states. The third involved the need to pass the Goals 2000 legislation before 1 April, so funds could be spent immediately.

On 31 March 1994, President Clinton signed the Goals 2000: Educate America Act at an elementary school in San Diego, California, thereby making funds available in 1994. However, public funds had been supplemented in December 1993, when philanthropist Walter Annenberg donated \$500 million towards Goals 2000. Initial grants from the donation were presented to the Coalition of Essential Schools, NASDC, and the Education Commission of the States. The Goals 2000: Educate America Act was supported by two other legislative enactments. The Clinton Administration reauthorised the Elementary and Secondary Education Act of 1965 to meet the requirements of the National Education Goals in the form of the Improving America's Schools Act, passed in October 1994, which allocated funds to local school districts, primarily for disadvantaged students. The School-to-Work Opportunities Act provided funds for transition programs, such as youth apprenticeships, for students entering the job market following completion of high school. Smith and Scoll (1995) concluded that the Clinton administration's legislation represented a change from previous federal practice in education by shifting from stringent fiscal and process regulations to supporting states and local school districts to implement their own plans based on the National Education Goals. Furthermore, Elmore and Fuhrman (1995) concluded that the impact of these standards on state-level policy-makers would require large changes in bureaucratic and regulatory culture to accomplish their implementation in local school districts through influence rather than direction.

In 1995, funding of the recently approved education legislation was threatened by the newly elected Republican-controlled Congress, which sought to reduce some programs as part of its ten-point legislative program, the Contract with America. In February 1995, the House of Representatives Appropriations Subcommittee on Labor, Health and Human Services, and Education voted to reduce or eliminate already approved United States Department of Education programs. In addition, the House of Representatives passed a plan to balance the budget by 2002, which included eliminating the United States Department of Education. In June 1995, this rescissions package was passed by Congress, but following President Clinton's announcement of an intention to veto the bill, the President and Congress worked together on a plan to balance the federal budget, which led to Congress passing a bill restoring most of the proposed reductions.

6.5 Second National Education Summit

At the 1995 annual meeting of the National Governors' Association, Louis Gerstner, Chairman of IBM Corporation, called for business leaders and the public to come together. In March 1996, 41 state governors, 49 chief executive officers of major corporations and 34 educators, including chief state school officers, participated in the second National Education Summit convened by the National Governors' Association and IBM Corporation at Palisades, New York. Its purpose was to build commitment for prompt actions by the

states and local communities to develop and implement high academic standards, establish accountability for standards, and apply information technology as a tool for improving teaching and learning. Delegates received a briefing book containing 12 papers dealing with various aspects of standards and technology in education in the United States and foreign countries. Furthermore, several educational technology projects undertaken by various schools and organisations were demonstrated. The Summit concluded with the adoption of a policy statement committing governors and business leaders to five actions. They should provide funds for implementing content standards, support actions to improve student performance, report on progress made to meet these standards, provide information and technical assistance to states and local communities through an independent agency, and initiate specific activities in their respective states.

6.6 State of the Union Address

In January 1997, President Clinton and Secretary Riley visited the First in the World Consortium, a group of school districts on Chicago's North Shore, which had banded together in 1995 to benchmark their schools' performances in mathematics and science against international standards. Since the performance of students from the Consortium's schools were only exceeded by those of students from Singapore, President Clinton called for the states and local communities to use the TIMSS test to raise standards in mathematics and science. In February 1997, the United States Department of Education's National Center for Education Statistics and the American Federation of Teachers sponsored a three-day conference, TIMSS: Lessons from the World, to show how the TIMSS results could be used to improve teaching and learning. As a consequence, the United States Department of Education administered the TIMSS test in 1997 and 1998 in states and school districts, which participated voluntarily, compared their results to international levels of performance, and in collaboration with the National Science Foundation assisted them to use federal resources more effectively.

This initiative was expanded in the State of the Union Address delivered in February 1997, when President Clinton designated education as the first priority for the administration during its second term. The essential element of the address was a ten-point plan, a call to action to prepare all Americans for the 21st century. The first point declared that the Clinton Administration would support voluntary national testing of reading in grade 4, based on the NAEP reading test, and mathematics in grade 8, based on the TIMSS test. The second point stated that every local community should ensure that a talented and dedicated teacher is placed in every classroom. The third point declared that every child should be able to read independently and well by the end of grade 3. The fourth point affirmed expansion of Head Start to increase the number of children aged below three years from low-income families by 200,000 to one million to benefit from its early literacy initiatives.

The fifth point stated that choice in public education would be expanded by requiring states and school districts to provide public school choice plans, and to publish report cards on schools. The sixth point addressed various strategies schools should adopt to curb violence and drug use. The seventh point specified federal funding provisions to support school districts in replacing and repairing run-down school buildings. The eighth point specified the scope of federal funding for financial assistance to students in higher education over the next five years to be provided through direct loans, grant aid, tax benefits, and other forms of assistance. The ninth point addressed the need to promote lifelong learning by providing greater educational and career opportunities for school leavers through the School-to-Work Opportunities Act, and consolidating the existing job training programs for adults. The tenth point referred to extending technological literacy for teachers and students.

Release of the United States TIMSS report by the United States Department of Education (1998) showed that grade 12 students lagged behind the international averages in mathematics and science. As a consequence, President Clinton convened a meeting of leaders from government, business, education and the scientific community at a high school in Silver Spring, Maryland, in March 1998. President Clinton challenged public officials, business leaders, educators, parents and students to improve student achievement by taking seven steps. Out-of-field teaching should be reduced. New teachers of mathematics and science should be tested rigorously. Rigorous mathematics and science courses based on national standards should be offered. Smaller classes should be provided with well-prepared teachers. School buildings should be built and renovated. Social promotion should be ended and failing schools improved. Access should be provided to the information superhighway.

6.7 Third National Education Summit

Together with the Business Roundtable, the Council of Great City Schools, the Learning First Alliance, the National Alliance of Business, the National Education Goals Panel, and the National Governors' Association, the Achieve Resource Center on Standards, Assessment, Accountability and Technology for Governors sponsored a third National Education Summit. Convened in September 1999 at Palisades, New York, the Summit involved more than 100 governors, business leaders and educators. They viewed 11 educational technology demonstrations and 17 virtual classroom exhibits selected by the New York-based Center for Children and Technology from more than 150 applications, as well as hosting a virtual summit on the Internet. Prior to the summit, a briefing book was distributed to each participant. It presented state-by-state progress reports, issues' briefs on strengthening accountability, helping all students achieve, improving teacher quality, diversifying the delivery system, and monitoring public support, a Public Agenda report,

viewpoints' statements by four education experts, and resources for further research. Following discussions at the summit on the successes and challenges posed in the states, the participants approved an action plan. It stated that all states would adopt strategies to improve the quality of teachers, help all students to achieve high standards, and strengthen accountability, although each state could approach these issues differently.

6.8 Fourth National Education Summit

Sponsored by the Achieve Resource Center on Standards, Assessment, Accountability and Technology for Governors, 90 governors, business leaders and educators participated in a fourth National Education Summit convened at Palisades, New York, in October 2001. Its purpose was to identify the next steps needed to ensure all students are achieving high standards in every American classroom by setting a common agenda among groups responsible for education policy-making in the states. Prior to the summit, a briefing book was distributed to each participant. It presented a progress report on standards-based reform, the findings of three surveys on public support for standards-based reform, research findings on factors affecting teaching and learning and the role of testing and accountability in driving improvement, and descriptions of 21 technology-driven educational programs, products and prototypes. Following presentations covering these issues, the participants approved a statement presenting three sets of principles relating to measuring results, strengthening accountability, and improving teaching.

6.9 No Child Left Behind

6.9.1 No Child Left Behind Act

Following election in November 2000, President George W. Bush appointed Roderick Paige, the superintendent of the Houston Independent School District as Secretary of Education in January 2001. At the same time, Bush (2001) released an education plan consisting of ten components. First, the academic performance of disadvantaged students would be improved by setting high standards, establishing annual assessments for every student, and providing requirements for accountability schools needed to meet. Second, literacy would be improved by focusing on reading in the early grades and implementing a reading program. Third, teacher quality would be improved by establishing effective professional development and innovative teacher reforms. Fourth, mathematics and science teaching would be improved by establishing new partnerships between school systems and higher education. Fifth, performance measures would be set for bilingual programs to increase the fluency of limited English proficient students. Sixth, charter schools, and innovative efforts to expand school choice would be funded to increase parental options. Seventh, safe schools would be encouraged by providing strategies for protecting teachers, promoting school safety, rescuing students from unsafe schools, and supporting character education.

Eighth, funds for information and communication technology in schools would be increased to enhance education. Ninth, funds would be provided for rebuilding schools operated by the Bureau of Indian Affairs and military impacted schools near military bases operated by the Department of Education. Tenth, a charter option would be provided to state and local education agencies to improve student achievement through accountability in exchange for increased freedom in spending federal funds.

Following passage through both houses of Congress in December 2001, President Bush signed the No Child Left Behind Act consisting of ten titles in January 2002. The first, Improving the Academic Achievement of the Disadvantaged, provided grants to improve basic programs, student reading skills, education of migratory children, prevention and intervention programs for neglected, delinquent or at-risk children, national assessment of title 1, comprehensive school reform, advanced placement programs, and school dropout prevention. The second, Preparing, Training, and Recruiting High Quality Teachers and Principals, provided grants for teacher and principal training and recruiting, mathematics and science partnerships, innovation for teacher quality, a troops-to-teachers program, a transition to teaching program, and enhancing education through technology. The third, Language Instruction for Limited English Proficient and Immigrant Students, provided grants for English language acquisition, language enhancement and academic achievement, and improving educational programs for language instruction. The fourth, 21st Century Schools, provided grants for safe and drug free schools and communities, and 21st century community learning centres. The fifth, Promoting Informed Parental Choice and Innovative Programs, provided grants for innovative programs, public charter schools, magnet schools assistance, and a fund for the improvement of education. The sixth, Flexibility and Accountability, provided grants to improve academic achievement, and a rural education initiative. The seventh, Indian, Native Hawaiian, and Alaska Native Education, provided grants for educational programs for Native Americans. The eighth, Impact Aid Program, provided grants for rebuilding schools. The ninth presented general provisions on flexibility, coordination, waivers, uniform provisions, and evaluations. The tenth presented information on repeals, redesignations, and amendments to other statutes.

6.10 Roles of Federal Agencies

Three federal agencies took prominent roles in developing, implementing and monitoring the national education reform strategy. The National Education Goals Panel formed the key policy-making body. A National Education Standards and Improvement Council, proposed as an executive body to certify national standards, was later abandoned. The National Skill Standards Board formed the executive body for developing and certifying national skill standards. The United States Department of Education became the main agency involved in funding the national education reform strategy.

6.10.1 National Education Goals Panel

Appointed in July 1990 to monitor progress towards reaching the six National Education Goals, the National Education Goals Panel (NEGP) originally consisted of six governors, four members of the President's administration, and four members of Congress. In March 1992, the membership was broadened to include eight governors, two members of the President's administration, and four members of Congress. Established as an independent executive branch agency under the Goals 2000 Educate America Act, NEGP was increased in March 1994 to eighteen members: eight governors; two members of the President's administration; four members of Congress; and four members of state legislatures. Although NEGP was dissolved in 2002, it undertook five activities to accomplish its mission. First, it assisted in building a national, bipartisan consensus for educational reform. Second, it reported on progress by issuing an annual report. Third, it reported on the progress of states in implementing standards. Fourth, it reviewed national content, performance, and opportunity-to-learn standards, and the criteria for certifying these standards. Fifth, it reported on promising and effective actions to achieve the goals.

In June 1991, NEGP created the National Council on Education Standards and Testing (NCEST) to examine the feasibility of developing national standards and a national system of assessments, and to recommend policies, structures and the mechanisms for setting them. NCEST met on eight occasions between June and December of 1991, created task forces, which produced background papers, and solicited comments from experts and organisations representing a wide range of interests. In its report, the National Council on Education Standards and Testing (1992) recommended that voluntary and dynamic national standards, initially for English, Mathematics, Science, History and Geography, reflecting high expectations, focus and direction, should be developed. In addition, multiple measures consisting of individual student and large-scale sample assessments aligned to the national standards should be set. A National Education Standards and Assessments Council (NESAC) should be formed, and NEGP and NESAC should share responsibility for certifying criteria for the national standards and assessments. A preliminary charter and scope of work plan for NESAC were adopted in July 1992.

In May 1993, NEGP formed the Goals 3 and 4 Standards Review Technical Planning Group to recommend criteria to review and certify national standards. Following recommendations presented in the Goals 3 and 4 Standards Review Technical Planning Group's report (National Education Goals Panel, 1993), NEGP approved five guidelines for developing national standards in November 1993. First, they should be voluntary, forming a resource to be used by the states, school districts and schools to guide, revise and align curricula, assessments, and teacher development. Second, they should address only

academic or cognitive areas. Third, they should attain world-class rigour. Fourth, they should be developed through a broad-based process of consensus. Fifth, they should be sufficiently flexible to be adapted for curriculum planning by state and local educators.

6.10.2 National Education Standards and Improvement Council

A major initiative of the Goals 2000 Educate America Act was the proposed formation of an independent executive branch agency, the National Education Standards and Improvement Council (NESIC). Its intended purpose was to identify areas in which national standards needed to be developed, to establish criteria for certifying standards, and to certify national and state standards in core subject areas, opportunity-to-learn standards, and assessment systems. Initially recommended in 1992 by NCEST, NESIC was to be composed of nineteen members, appointed by the President from nominations received from the Secretary of Education, the Speaker of the House of Representatives, the Majority Leader of the Senate, and NEGP. Members of NESIC could include educators, representatives of business and industry, labour unions, higher education institutions, education experts, and representatives from the public.

Despite the carefully delineated authority provided to NESIC under the Goals 2000 Educate America Act, conservative groups became concerned about certification of national standards. Cohen (1995) found that the demise of NESIC resulted from Republican successes in the congressional and state elections during 1994. Many new Republicans, who were elected to Congress in November 1994, saw little need for an agency that would devise, promulgate and certify national standards. Following a recommendation from NEGP in January 1995, Secretary Riley advised the President not to appoint NESIC. Subsequently, four bills were introduced into Congress to eliminate NESIC.

6.10.3 National Skill Standards Board

Another important initiative of the Goals 2000 Educate America Act was the formation of the National Skill Standards Board (NSSB), consisting of 28 members drawn from business, unions, education, human resource professions, state and local governments, community-based organisations, and civil rights organisations. Its mission was to stimulate the development and adoption of a system of voluntary national skill standards, and to promote the development of techniques for assessing and certificating the attainment of the skill standards. NSSB oversaw 22 projects funded by the United States Departments of Education and Labor to develop skill standards for selected occupations.

6.10.4 United States Department of Education

The role of the United States Department of Education in the national reform strategy was to assist states and local communities develop strategies to reach the National Education

Goals, which was accomplished through five main activities. First, its staff worked with community, state and federal agencies, national organisations, corporations, and non-profit groups to help strengthen schools. Second, it coordinated the work of various government agencies to assist the efforts of local communities in the reform process. Third, its staff provided technical assistance to local communities to find information, resources and ideas to facilitate their reform strategies. Fourth, it encouraged the formation of new coalitions to reach the National Education Goals by expanding outreach. Fifth, it improved communications for helping communities exchange ideas through regional conferences, a telephone hotline, a monthly newsletter, a clearinghouse, and monthly satellite town meetings.

6.11 National Standards Projects

The main initiative for national education reform in the United States arose from school reform projects, and not from curriculum reform. The tradition of local control and state responsibility for education hindered the development of a strong movement towards developing a national curriculum. In spite of this trend, there was considerable public support during the late 1980s and early 1990s for national initiatives in curriculum reform. The 21st annual Gallup Poll of the public's attitudes towards public schools, reported by Elam and Gallup (1989), surveyed a sample of 1,584 subjects. It found that 70 percent of the respondents favoured public schools in their communities conforming to national achievement standards and goals, 69 percent favoured a standardised national curriculum, and 77 percent favoured standardised national tests to measure academic achievement. The 23rd annual Gallup Poll of the public's attitudes towards public schools, reported by Elam et al. (1991), surveyed a sample of 1,500 subjects. It found that 81 percent of the respondents favoured public schools in their communities conforming to national achievement standards and goals, 68 percent favoured a standardised national curriculum, and 77 percent favoured standardised national tests to measure academic achievement. The 26th annual Gallup Poll of the public's attitudes towards public schools, reported by Elam et al. (1994), found from a sample of 1,326 subjects that 83 percent of the respondents believed a national curriculum was important, and 73 percent believed standardised national examinations were important.

A multiplicity of trends in American education had concurred by this time leading conservatives and liberals to forge a consensus about focusing on what students should learn. From this consensus, the definition of national standards based on academic disciplines issued from the six National Education Goals. Policy-makers set nationally recognised groups in key disciplines the task of developing national standards consisting of content, performance, opportunity-to-learn, and occupational skill standards. Content standards refer to broad descriptions of knowledge and skills students should achieve in

particular subject areas. Performance standards are examples and definitions of knowledge and skills in which students need to demonstrate proficiency. Opportunity-to-learn standards, which address conditions necessary at each level of the educational system to provide all students with opportunities to master content standards and meet performance standards, provide criteria covering six elements. These elements refer to the quality and availability of curricula, materials and technology, the capability of teachers to meet learning needs, the availability of professional development, the alignment of the curriculum to content standards, the adequacy of school facilities for learning, and the application of non-discriminatory policies. Porter (1995) reported that opportunity-to-learn standards became particularly controversial during legislative debates on Goals 2000, leading the National Governors' Association (1993) to define the nature of a system for opportunity-to-learn standards. Occupational skill standards specify the level of knowledge and competence to perform work-related functions successfully within particular occupations.

6.11.1 Mathematics Standards

The first effort to develop national standards, which was undertaken by the National Council of Teachers of Mathematics (NCTM), preceded any initiative undertaken by the federal government. McLeod et al. (1996) reported that the national standards for Mathematics originated from the impetus provided by an NCTM policy statement, which emphasised problem-solving and argued for a broad definition of basic skills (National Council of Teachers of Mathematics, 1980). Following a conference held by the Commission on Precollege Education in Mathematics, Science and Technology in September 1982, the National Science Foundation (1983) recommended that new objectives should be set for the curriculum, and professional associations should take the responsibility for directing change. In November 1983, the Conference Board of the Mathematical Sciences sponsored a meeting in Warrenton, Virginia, at which the recommendations of *Educating Americans for the 21st Century* were discussed, and recommendations on the curriculum were presented (Conference Board of the Mathematical Sciences, 1984). A second conference held in the University of Wisconsin at Madison recommended that a task force should be established to develop guidelines for the mathematics curriculum. Another important stimulus came from the involvement of NCTM's committee structure in setting criteria for textbook selection, which led to a motion by the NCTM Board of Directors in March 1984 to appoint a task force to develop a proposal. Since it failed to obtain funds from external sources, NCTM allocated funds for the project at its spring meeting in 1986. Soon afterwards, NCTM appointed the fourteen-member Commission on Standards for School Mathematics, comprising teachers, supervisors, mathematics educators and mathematicians, to oversee the development of the national standards. At its first meeting held in October 1986, the Commission appointed

four working groups; one each for grades K to 4, 5 to 8, 9 to 12, and an evaluation group. The working groups examined reports on education reform, various research reports, state curriculum frameworks, and curriculum documents from foreign countries. During the winter of 1986 and the spring of 1987, the Commission chairman and working group leaders met to refine the draft statement. Following a meeting of the working groups in Park City, Utah, copies of the 90-page, first draft were distributed to members of the NCTM Board of Directors and selected members of the community. The comments collected from this review were circulated to the working groups, which then met at Leesburg, Virginia, to produce a 180-page, second draft. Copies of this draft were disseminated to NCTM members for review during the 1987-1988 school year. Following consideration of more than 2,000 comments, the working groups developed the final version of the standards. Early in the summer of 1988, the writing groups reconvened at Park City, Utah, to meld the comments into the final statement for the national standards. This process was informed by the reactions of focus groups of parents, mathematicians, scientists, state education officials, school board members, school administrators, and employers convened through a project sponsored by the Mathematical Sciences Education Board. Approved by the NCTM Board of Directors in September 1988, the national standards were endorsed by a number of professional mathematics organisations before being released at a press conference in Washington, DC, in March 1989.

The *Curriculum and Evaluation Standards for School Mathematics*, published by the National Council of Teachers of Mathematics (1989), presents 54 standards divided among four categories. These comprise 13 curriculum standards for grades K to 4, 13 curriculum standards for grades 5 to 8, 14 curriculum standards for grades 9 to 12, and 14 evaluation standards. The first four standards in each set relate to mathematics as problem solving, communication, reasoning, and mathematical connections. In each set, these are followed by nine or ten standards, which refer to particular topics or specific content. The evaluation standards are divided into three categories: the first group describes general assessment strategies; the second group focuses on how teachers gather information to assess student achievement; and the third group refers to gathering information for program evaluation. The *Curriculum and Evaluation Standards for School Mathematics* states that materials, adopted for use in a school district, should be evaluated from the perspective of how they reflect the standards' recommendations. Evaluation of materials should involve more than a superficial screening of topics on a scope and sequence chart, but rather a comparative analysis to determine consistency between the standards and the curriculum. A range of materials should be used to support the standards.

In January 1988, the NCTM Board of Directors appointed a task force to develop a proposal to fund a project jointly with the National Science Foundation to develop professional

standards for teaching mathematics. Early in 1989, NCTM appointed a Commission on Professional Teaching Standards to oversee the development of professional standards by three writing groups, one on mathematics teaching, another on the evaluation of mathematics, and the other on the professional development of teachers of mathematics. A draft of the professional teaching standards was developed in the summer of 1989, and distributed to members of NCTM and other organisations for review during the 1989-1990 school year. The draft was then revised on the basis of comments received from the review by the Commission and its working groups during the summer of 1990.

The *Professional Standards for Teaching Mathematics*, published by the National Council of Teachers of Mathematics (1991), is organised into five sections. The first section explicates six standards for teaching mathematics, presented through elaborations providing guidance for teaching at different levels, which are organised into four categories: tasks; discourse; environment; and analysis. The second section explicates eight standards for the evaluation of the teaching of mathematics, presented through elaborations providing guidance for teachers undertaking self-improvement, mentors, and supervisors involved in evaluating teaching, which are organised under two categories: the process of evaluation; and the foci of evaluation. The third section explicates six standards for both preservice and inservice professional development of teachers, presented through elaborations providing guidance for colleges, universities, governmental departments and schools. The fourth section explicates four standards for the support and development of teachers and teaching, presented through elaborations providing guidance for policy-makers, schools, colleges, universities, and professional organisations. The fifth section discusses issues involved in taking the next steps towards professional improvement.

In 1992, NCTM decided to develop assessment standards to expand on, but not replace, evaluation standards specified in *Curriculum and Evaluation Standards for School Mathematics* by establishing additional criteria for student assessment and program evaluation, and elaborating the vision of assessment. In early 1993, NCTM appointed three working groups on management, standards, and purposes. A first draft, which had been completed in August, was circulated to a Resource Group and other educators. The final document was produced from the responses of more than 2,000 reviewers.

The *Assessment Standards for School Mathematics*, published by the National Council of Teachers of Mathematics (1995), presents a rationale for developing new assessment techniques that reflect NCTM's vision of reforming school mathematics. It proposes a model for the assessment process consisting of four phases: planning assessment; gathering evidence; interpreting evidence; and using results. The second section discusses six standards; assessment should reflect common mathematics content, enhance mathematics

learning, promote equity, provide an open process, promote valid inferences about mathematics learning, and offer a coherent process. The third section describes through examples and vignettes how the six standards may be used to improve assessment of mathematics across four broad purposes: monitoring students' progress; making instructional decisions; evaluating student achievement; and evaluating programs. The concluding section suggests that the *Assessment Standards for School Mathematics* may be used to promote dialogue, personalisation, reflection and action about assessment issues in mathematics education.

Beginning in 1995, NCTM convened focus groups at various meetings and conferences to discuss revising the three standards' documents to meet the needs of the twenty-first century. Through a process of consensus, these groups concluded that the central message was correct, but that it needed to be elaborated and refined in terms of new teaching and curricular challenges for the next century. On the basis of this response, the NCTM Board of Directors voted at the NCTM annual meeting held at San Diego in April 1996 to commence a standards update project. The Commission on the Future of the Standards, which had recommended the development of one standards' volume to be released in 2000, coordinated the process. It convened two special conferences, one on the foundations of school mathematics held at Atlanta in March 1998, and the other on technology held at Washington, DC, in June 1998. It also facilitated the exchange of a set of commissioned papers and a collection of curriculum documents between the writing groups and the educational community. Four writing groups, one each for grades pre-K to 2, 3 to 5, 6 to 8, and 9 to 12, met for the first time in July 1997. They were assisted by three specialist groups: topical advisory resource panels advised on particular topics relating to the standards; an electronic format group created electronic media, such as a CD-ROM containing examples and vignettes and a web site; and association review groups from mathematics organisations reviewed drafts of the standards. NCTM also collaborated with MCI WorldCom Foundation to create a web site, Illuminations, containing searchable databases of web-based multimedia lessons plans, activities designed about teaching and learning mathematics, web sites containing reviewed mathematics activities, and teacher-developed lesson plans. The writing groups developed a discussion draft in both printed and electronic formats, which was released for review in October 1998. Responses to the review obtained from NCTM regional conferences held at Charlotte, North Carolina, Des Moines, Iowa, and Great Falls, Montana, the NCTM annual meeting held at San Francisco in April 1999, and an electronic discussion forum for public input were used to produce the final version during July 1999. The *Principles and Standards for School Mathematics* was released at the NCTM annual meeting in Chicago in April 2000.

The *Principles and Standards for School Mathematics*, published by the National Council of Teachers of Mathematics (2000), presents a vision for school mathematics based on mathematics for life, as part of cultural heritage, the work place, and the scientific and technical community in the context of a changing world. The features of high-quality mathematics education are defined in six principles. Equity is based on high expectations and strong support for all students. The curriculum is coherent, focused and well articulated. Effective teaching is based on an understanding of what students need to know and supporting them to learn it well. Effective learning is based on building new knowledge from experience and prior knowledge. Assessment should support learning and furnish useful information. Technology should be applied to mathematics education. The mathematics content and processes that students should know and be able to use are defined in ten standards organised into pre-K to 2, 3 to 5, 6 to 8, and 9 to 12 grade bands. Mathematics content is categorised into five standards: number and operations; algebra; geometry; measurement; and data analysis and probability. Mathematical processes are categorised into five standards: problem-solving; reasoning and proof; communication; connections; and representation. The *Principles and Standards for School Mathematics* expounds perspectives on six issues to guide decision-making in mathematics education. These are meeting the different abilities of students, selecting high quality and appropriate materials, providing adequate preservice training and on-going, collaborative professional development, stimulating student interest in mathematics, aligning assessments to the goals of mathematics education, and incorporating technology to support learning.

6.11.2 Initiation of the Projects

The recommendation by NCEST that voluntary national standards and a national system of achievement tests should be established, prompted the United States Department of Education to support the development of national standards (Ravitch, 1992; Ravitch, 1993; Ravitch, 1995).

In September 1991, the United States Department of Education funded a project for the National Research Council of the National Academy of Sciences to develop national standards for the Sciences. In December 1991, the United States Department of Education and the National Endowment for the Humanities funded a project for the National Center for History in the Schools in the University of California at Los Angeles to develop national standards for United States and World History. In June 1992, the United States Department of Education, the National Endowment for the Humanities and the National Endowment for the Arts funded a project for the Music Educators National Conference to develop national standards for the Arts on behalf of the Consortium of National Arts Education Associations. In July 1992, the United States Department of Education and the Pew Charitable Trusts funded a project for the Center for Civic Education to develop national

standards for Civics and Government. Also in July 1992, the United States Department of Education funded a project for a consortium led by the National Council for Geographic Education to develop national standards for Geography. In September 1992, the United States Department of Education funded a project for the Center for the Study of Reading at the University of Illinois, the National Council of Teachers of English and the International Reading Association to develop national standards for English Language Arts. In January 1993, the United States Department of Education funded a project for the American Council on the Teaching of Foreign Languages to develop national standards for Foreign Languages.

In addition to the funded projects, independent projects were initiated to develop national standards in four other subject areas. The National Council for the Social Studies developed national standards for the Social Studies. The Association for the Advancement of Health Education developed national standards for Health. The National Association for Sport and Physical Education developed national standards for Physical Education. The National Council on Economic Education developed national standards for Economics.

6.11.3 Science Standards

The development of national standards for Science had important precursors. In the 1980s, the American Chemical Society, the Biological Sciences Curriculum Study, the Education Development Center, the Lawrence Hall of Science, the National Science Resource Center, and the Technical Education Resources Center developed science curricula.

In June 1985, the American Association for the Advancement of Science initiated the three-phase Project 2061, intended to contribute to the long-term reform of science education (Atkin et al., 1996). In the first phase, the conceptual base for reform was defined by panels of experts convened in October 1985 for five subject areas: biological and health sciences; mathematics; physical and information sciences, and engineering; social and behavioural sciences; and technology. The American Association for the Advancement of Science (1989) published a report on this work. It outlined what should be known about the nature of science, mathematics and technology as related endeavours and the views of the world as depicted by current science, and defined goals for science literacy in terms of historical perspectives, common themes, and habits of mind. In the second phase, project teams were formed through partnerships with school districts in six localities. These teams were based in three rural school districts near Athens, Georgia, a suburban school district in Madison, Wisconsin, the large urban school district of Philadelphia, four school districts in San Antonio, Texas, an urban school district in San Diego, and an urban school district in San Francisco. In March 1989, these teams were charged with designing alternative curriculum models to promote the scientific literacy goals outlined in the report. This work involved

translating the goals for science literacy into benchmarks specifying what students should know by the end of grades 2, 5, 8 and 12. Following an extensive review of the benchmarks resulting in 1,300 responses from teachers, administrators, scientists and others, the American Association for the Advancement of Science (1993) published the benchmarks, and presented a guide for assisting educators to design curricula appropriate to their needs. To help educators gain insight into the connections between benchmarks, Project 2061 collaborated with the National Science Teachers Association to develop a collection of linked maps depicting how students gain in their understanding and skills towards particular science literacy goals. Published by the American Association for the Advancement of Science (2003), these maps not only display the sequence of benchmark ideas that lead to a goal, but also connections across science, mathematics and technology. The third phase of implementation involved developing a CD-ROM, *Resources for Science Literacy: Professional Development*, released in 1997. It enabled users to make more effective use of specific learning goals by providing information on professional materials for science education, details on college courses, comparisons of benchmarks and national standards, literature on cognitive research, and a workshop guide. Widely used in Project 2061 for professional development, the CD-ROM was updated for connection to the Internet in 2000. Although they concluded that Project 2061 produced a comprehensive vision for science education implemented nationally through a process of systemic reform, Atkin et al. argued that its approach to curriculum reform reflected assumptions prevailing during the curriculum reform movement. It projected the perspectives of academic scientists, failed to identify responsibility for developing a Project 2061 curriculum, attempted to maintain full control of the project's development in the initiators' hands, and failed to address matters of access and equity.

In 1990, the National Science Teachers Association (NSTA) initiated a project on Scope, Sequence and Coordination of Secondary School Science based on two sets of criteria: ten tenets of scope, sequence and coordination derived from research on how students learn science; and the national science education standards. An important purpose of the project was to establish that a science program, based on the tenets of scope, sequence and coordination, would better enable senior secondary students to achieve the national science education standards. Such a program would provide science across four subject areas: biology; chemistry; earth and space sciences; and physics. To support this project, NSTA developed a series of micro-units, consisting of teacher and student components, based on the national science education standards, provided teacher development, conducted program evaluations and a trial implementation of the program in a representative sample of high schools.

In the spring of 1991, NSTA proposed that the National Research Council of the National Academy of Sciences (NAS) should coordinate the development of national standards for Science. After consultations with science education associations, the National Research Council developed a design and time frame for the project. Following appointment of a chairperson for the National Committee on Science Education Standards and Assessment, a Chair's Advisory Committee was formed early in 1992 to identify and recruit staff and volunteers to serve on the 36-member National Committee, and its three working groups on content, teaching and assessment. The process of developing the national standards consisted of three phases (Collins, 1995; Collins, 1998). Early explorations involved working group meetings, the release of discussion papers for public reaction, and presentations at various forums. The preliminary draft was written, reviewed and revised during the middle phase. The final draft was presented for nationwide review, revised and published during the final phase. Hoffman and Stage (1993) reported that work on the national standards began late in 1991, when staff of the National Research Council produced science framework summaries, which were based on the work of national projects, state science frameworks, and science documents from foreign countries. The science framework summaries were made available to the National Committee and the working groups, which adopted a process of critique and consensus to develop the national standards. More than 150 public presentations were made to promote discussions about the subject matter of the national standards, and consultations were undertaken with large numbers of science teachers, scientists and science educators. Discussion and working papers were released for reviews in October and December of 1992, and in February and July of 1993. Late in 1993, work began on producing a preliminary draft of the national standards, which was released in May 1994 for review by focus groups. These groups consisted of organisations represented on the Chair's Advisory Committee, NCTM, representatives of the New Standards Project, and five groups composed of individuals who had not been involved in the project. Separate focus groups reviewed the content, teaching, assessment, program and system standards. An extensively revised draft was produced in November 1994 after analysis and consideration of suggestions for improving the preliminary draft. However, Culotta (1994) reported that a series of problems, resulting from changes in key project staff and disparaging reviews of the preliminary draft, identifying excessive demands in the standards on students and opposition to a section on the philosophy of science, led to delays in releasing the final draft. More than 40,000 copies of the final draft were distributed in December 1994 for a nationwide review involving 18,000 individuals and 250 groups. The comments of these individuals and groups were collated and analysed to prepare the final version of the national standards, which were released in November 1995.

The *National Science Education Standards*, published by the National Research Council (1996), is organised into eight sections. The first section presents a rationale for national science education standards based on four goals for school science. The second section states that development of the national science education standards was guided by the principles of science for all students, learning science is an active process, school science reflects the intellectual and cultural traditions of contemporary science, and improving science education is part of systemic educational reform. The third section specifies six teaching standards, which refer to planning a science program, guiding and facilitating learning, assessing teaching and learning, designing and managing the physical environment, building learning communities, and school planning. The fourth section specifies four professional development standards, which refer to learning science content, learning to teach science, learning to learn, and program development. The fifth section specifies five assessment standards, which refer to coordinating assessments with intended purposes, measuring student achievement and opportunity to learn, matching technical quality of data with consequences, avoiding bias, and making sound inferences. The sixth section specifies 22 content standards organised into eight categories across two types of grade bands. The first type consists of unifying concepts and processes for grades K to 12. The second type consists of science as inquiry, physical science, life science, earth and space science, science and technology, science in personal and social perspectives, and history and nature of science for grades K to 4, 5 to 8, and 9 to 12. The seventh section specifies six program standards, which refer to the consistency of curriculum elements, the nature of the program of study, coordination between science and mathematics, sufficient resources, equity and excellence, and schools as communities of learners. The eighth section specifies seven system standards, which refer to establishing a common vision between policies and practices, systematic coordination of policies, continuity of policies, resourcing policies, equity of policies, unintended effects of policies, and individual responsibility. The *National Science Education Standards* may be used in discussions with textbook publishers to make wise selections from available science materials, for developing exemplary materials, and for focusing attention on the need for materials. In the rationale statement, the fifth principle states that more resources, such as time, personnel and materials, rather than science content, need to be provided for students to understand more science. The fourth teaching standard suggests teachers should select appropriate science tools, materials, print resources and technological resources, because it is important for students to learn how to access scientific information from various resources. The fourth program standard specifies that students should have easy and frequent opportunities to use a wide range of equipment, materials and other resources for experimentation and direct investigation of phenomena. It recommends that a mechanism should be put in place for identifying, storing, maintaining and providing exemplary materials to teachers in a timely fashion. The fourth system standard specifies that policies influencing science education need to

contain provisions for supplying print, non-print and computer materials, laboratories and scientific apparatus.

6.11.4 History Standards

Nash et al. (1998) related the development of national standards for History to two previous reform efforts. The first involved the work of both the Conference on History, Civil Government and Political Economy, convened by the Committee of Ten in 1892, and the Committee of Seven formed by the American Historical Association (AHA) in 1896, which gave history a secure place in the curriculum. The second involved the Educational Excellence Network establishing a commission in 1987 to address the concern over the inadequacy of history taught in American schools. The Bradley Commission on History in Schools (1988) made nine recommendations. First, all students should study history. Second, historical studies should focus on thematic context and chronological perspective to develop critical judgment capabilities. Third, the time required to develop understanding in history should be considerably greater. Fourth, the elementary social studies curriculum should be history-centred. Fifth, no fewer than four years of history should be required in high school. Sixth, the curriculum should include the historical experiences of peoples from all parts of the world. Seventh, the roles of all social groups should be studied. Eighth, a substantial program of history should be required for certifying social studies teachers in high school programs. Ninth, history departments in institutions of higher education should review the structure and content of their history programs for suitability to the needs of prospective teachers.

In response to these recommendations, the National Center for History in the Schools (NCHS), established in 1988 in the University of California at Los Angeles, initiated a project funded by the National Endowment for the Humanities. Its purpose was to define a rationale for the study of history in schools, and specify the core ideas, themes and topics in national standards for United States and World history. After more than four years of collaborative work by distinguished historians, teachers and curriculum specialists, Crabtree et al. (1992) published a curriculum guide, *Lessons from History*, which presented a case for studying history in schools, and identified four major narrative themes. The first theme was the development and changing character of human societies. The second theme was the economic and technological development of human societies. The third theme was people's development and representation of their understanding of themselves, their moral imperatives, and their place in the universe. The fourth theme was the development of political theories and organisation. The guide organised essential understandings for United States history into 14 units, and World history into six units.

Following funding of the national project in December 1991, NCHS invited national organisations to participate in developing criteria to guide the writing of the national standards. Nine national organisations formed organisational focus groups to provide advisory, review and consultancy services. NCHS appointed the 30-member National Council for History Standards, consisting of members selected from the nine organisational focus groups, staff of the Social Studies Development Center, and supervisors and teachers from schools, as the policy-making body to guide the project. The National Forum for History Standards, composed of representatives from major education, public interest, parent-teacher, and other organisations concerned with history in schools, provided access for public participation and advisory response. Three curriculum task forces, consisting of more than 50 members, composed of experienced classroom teachers recommended by the organisational focus groups, and recognised scholars in United States and World history, first met to draft the national standards during the summer of 1992.

Bicouvaris (1994a), 1989 National Teacher of the Year and project participant, reported that development of the national standards was marked by two separate debates over the issue of multiculturalism in the United States standards, and criteria for the World History standards. At the National Forum's second meeting in April 1992, representatives of various ethnic groups stated similar viewpoints that the standards should present the heritages of minority groups. On the other hand, representatives of more conservative groups sought to represent democratic principles, which bind the United States together as a nation. Final advice from the National Forum led to a decision by the National Council not to base the national standards on *Lessons from History*, because of the perceived lack of balanced treatment of minority groups. A second debate arose over criteria set as guiding principles for the place of Western civilisation in the story of World history. Some groups, such as AHA and the Association for Supervision and Curriculum Development, argued for a global perspective. The debate became so acrimonious that AHA, in a letter to the project's co-directors in July 1992, threatened to leave the standards-setting process. The failure to agree on more than general criteria for World History led the National Council to appoint an ad hoc World History Committee to develop a framework to assist the writing teams draft national standards. Dividing history into several eras, this committee presented a report in January 1993 listing important questions to guide the writing groups in terms of crucial points that societies have developed within cultural, economic and political contexts. This report had the effect of resolving the differences between the groups over criteria, since the National Council adopted compromise wording when it met again in June 1993.

Following the final meeting of the National Council in May 1994, the three task forces revised the final drafts over the summer of 1994. The original edition of the national

standards was then published in three volumes. *National Standards for History for Grades K-4: Expanding Children's World in Time and Space* (Crabtree and Nash, 1994a) built on young children's immediate interests. *National Standards for United States History: Exploring the American Experience, Grades 5-12* (Crabtree and Nash, 1994b), and *National Standards for World History: Exploring Paths to the Present, Grades 5-12* (Crabtree and Nash, 1994c) presented standards for older students. Each volume, which followed a similar format, is based on a rationale for understanding history, a definition of historical standards, and sets of historical understandings categorised under five skills for historical thinking: chronological thinking; historical comprehension; historical analysis and interpretation; historical research capabilities; and historical issues-analysis and decision-making. The historical understandings are integrated with the five skills in historical thinking to form eight standards specified across four topics in the volume for grades K to 4. The historical understandings are integrated with the five skills in historical thinking to form standards specified across eras for each of the two volumes for grades 5 to 12: 31 standards across ten eras for United States History; and 39 standards across eight eras for World History.

The national standards, however, became controversial two weeks before their release. Lynne Cheney, former chairperson of the National Endowment for the Humanities and supporter of the funding grant for the national project, published a criticism in the *Wall Street Journal* in October 1994. It stated that the national standards represented the effort of a small radical group of academics, portrayed multicultural excess, and failed to depict the celebratory aspects of American history or emphasise Western civilisation in World history. She concluded that revisionists and ethnic activists representing African American and Native American groups, who together presented views of political correctness within the national standards, had captured the National Council. Observers offered a variety of explanations for Cheney's actions. Some accepted her assertion that she was genuinely shocked by the documents, which did not match her expectations of reflecting *Lessons from History*. Others believed she feared being blamed for the controversy surrounding the national standards. Some speculated that her opposition was motivated by a possible run for Republican presidential candidature by her husband, former Secretary of Defense, Richard Cheney.

This debate soon proved perfect substance for conservative groups. A few days after Cheney's attack, Rush Limbaugh, the popular right-wing talk show host, told his audience that the national standards were part of the America-bashing multicultural agenda. Unleashed in the news media by Limbaugh's comments, conservative attacks were followed in December 1994 by adversarial debates on television in which Cheney debated prominent historians. The alliance forged between the conservative Christian Right and Republican candidates during the 1994 congressional election led groups such as Pat

Robertson's Christian Coalition and Phyllis Schlafly's Eagle Forum to censure the national standards as part of their attack on Goals 2000 and the United States Department of Education. Furthermore, Gary Bauer's Family Research Council released alternative standards in 1995 called *Let Freedom Ring! A Basic Outline of American History*. The criticism then moved into the political arena, when the Senate passed a resolution in January 1995 condemning the national standards by a vote of 99 to 1. Although the political debate faded after the Senate resolution, Republican House Speaker Newton Gingrich wrote in the August 1995 issue of *Time* that the United States History volume distorted and undermined American history. Senate Majority Leader and Republican presidential candidate, Robert Dole, speaking to the American Legion at a Labour Day ceremony in Indianapolis in September 1995 said that the national standards disparaged America and its Western tradition. Soon afterwards, Secretary Riley responded by registering his own and President Clinton's opposition to using the existing standards as a basis for history curricula in American schools.

In the meantime, Cheney had organised an ad hoc standards review group, the Committee to Review National Standards, based at the American Enterprise Institute in Washington, DC, and funded by the Reader's Digest Association and the conservative John M. Olin Foundation. In January 1995, officials of several national standards projects met with leading critics of the national standards for History. At this meeting, Gary Nash, the project's co-director, agreed to revise the national standards. This decision generated a debate between some educators, who supported revising the national standards and members of Cheney's Committee, who insisted that they should be discarded. In an effort to save the national standards, NCHS agreed to the Council for Basic Education (CBE) convening two panels of historians, educators and public officials to determine whether they could be revised. One panel examined the United States History standards and the other panel reviewed the World History standards. In October 1995, both panels announced that the national standards, though flawed, could be revised. They found that the overwhelming majority of criticisms were targeted at teaching examples in the documents, rather than the actual standards. The review panels made nine recommendations. First, the standards should be revised without including teaching examples. Second, the revision should be guided by the criteria established by NCHS to develop the standards. Third, the teaching examples should be deleted. Fourth, biased language should be eliminated. Fifth, historical thinking should be clarified, expanded and integrated into the standards. Sixth, the standards should be strengthened in their treatment of other disciplines, the exchange of ideas, and the interaction of historical spheres. Seventh, social groups should be treated in their specific historical contexts by recognising diversity. Eighth, the standards should encourage students to consider broader issues and their development over time and place. Ninth, more attention should be given

to the relationships between groups, the American nation, opportunities given to immigrants, and the development of democratic ideals.

In response to these recommendations, the national standards were revised over a five-month period between November 1995 and February 1996 by NCHS staff, assisted by a small group of history educators. A newly formed Advisory Board to NCHS appraised the revisions in December 1995, and the two review panels and CBE endorsed the revised edition, which had compressed the original edition's three volumes into a single document. In spite of this process, the opinions of conservatives were divided about whether the revised national standards overcame their objections; whilst Ravitch (1997) believed they had been partly satisfied, ultra-conservative opponents rejected this opinion (Diggins, 1997; Fonte and Lerner, 1997; London, 1997). Although Republicans in the House of Representatives attempted to censure the revised national standards in September 1996, the press received them favourably, and the controversy died away. However, the controversy that led to the revision of the national standards was examined in numerous published interpretations. These reflected both liberal viewpoints (Bicouvaris, 1994b; DiegmueLLer and Viadero, 1995; Jost, 1995; Lagemann, 1995; Nash and Dunn, 1995; Nash et al., 1998) and the conservative standpoint (Fonte, 1994; Cheney, 1995).

Published by the National Center for History in the Schools (1996), the revised edition, *National Standards for History*, consists of two parts. The first part, National Standards for History, K to 4, presents a rationale for teaching history at the elementary level by applying the 'here-there-then' approach, a modified 'expanding environments' approach, or a literature-centred approach to analyse the social, political, scientific and technological, economic, and cultural spheres of human activity. The three policy issues of ensuring equity for all students, providing adequate teaching time for history, and linking history to related disciplines need to be taken into account. The historical understandings are integrated with the five skills in historical thinking to form eight standards specified across four topics. The second part, National Standards for History, 5 to 12, presents a rationale for teaching history at the middle and high school levels by analysing the social, political, scientific and technological, economic, and cultural spheres of human activity. The three policy issues of ensuring equity for all students, providing adequate teaching time for history, and accommodating variability in state and local curriculum plans need to be taken into account. In United States History for grades 5 to 12, the historical understandings are integrated with the five skills in historical thinking to form 31 standards across ten eras. World History should be taught for a minimum of three years by using various curricular frameworks applying different approaches, including comparative civilisations, civilisations in global contexts, interregional history, or thematic history. In World History for grades 5 to 12, the historical understandings are integrated with the five skills in

historical thinking to form 46 standards across nine eras. The *National Standards for History* states that particular resources should be used in history programs. Students in grades K to 4 should use historical documents, maps, graphical and tabular data, visual information in photographs, paintings, cartoons and architectural drawings, fictitious and factual documents, and historical data. Students in grades 5 to 12 should use historical documents, maps, charts, tables, pie and bar graphs, flow charts, Venn diagrams and other graphic organisers, visual, literary and musical sources, and historical data.

In order to support implementation of the national standards, NCHS published *Bring History Alive*, a series of two sourcebooks, one for United States History and the other for World History, containing essays providing insights about particular eras of United States and World History. Several sample student activities designed for grades 5 to 12, which had been keyed to the revised national standards, accompany each essay. Both volumes conclude with a section presenting annotated lists of resources available for teaching United States and World History. In collaboration with history professors and teachers, NCHS published over 60 teaching units on United States and World history. Correlated to the national standards for History unit objectives, each teaching unit consists of two parts: teaching background, providing information on the subject matter; and lesson plans, presenting a variety of ideas and approaches for teaching the unit, together with resources.

6.11.5 Arts Standards

Following the release of a National Arts Education Accord early in 1992, the American Alliance for Theatre and Education, the National Art Education Association, the Music Educators National Conference (MENC) and the National Dance Association formed the Consortium of National Arts Education Associations. The Consortium's mission was to obtain a grant to develop national standards for the Arts. In the spring of 1992, the 32-member National Committee for Standards in the Arts was established to oversee the development of the national standards. Four task forces, one representing each of the Consortium's members, were formed to review state-level arts education frameworks, standards from foreign countries, and draft the national standards. In addition, a task force of state arts education consultants was engaged to draft a component covering common issues among the arts, and the process for implementing the national standards. The developmental process employed in the project, consisting of phases involving writing, review and revision, was widely reported (Down and Mitchell, 1993; Lehman, 1993; Mahlmann, 1993; Palmarini, 1993; Hausman, 1994). In October 1992, the National Committee reviewed progress on the development of the national standards, and formed a seven-member Standards Review Subcommittee to oversee the release of the drafts for Dance, Music, Theatre and Visual Arts standards to respective groups of arts educators for review in January 1993. The responses of representatives from education, business,

government and arts organisations were collected at a national symposium on the national standards held in Washington, DC, in March 1993. Following revisions to the standards for each subject area, a complete draft of the national standards was disseminated in August 1993 for a nationwide review. The Consortium then held four regional forums in Sacramento, Albuquerque, Kansas City, and Washington, DC, in September 1993, with an additional forum, held in Boston in October 1993, being sponsored by the Boston Conservatory. Following final revision, the national standards were approved by the National Committee in January 1994, and presented to the Secretary of Education at a ceremony held at the National Press Club in Washington in March 1994.

The *National Standards for Arts Education*, published by the Consortium of National Arts Education Associations (1994), is based on a rationale for Arts education, and places the context and issues of Arts standards in educational reform on six bases. Arts standards provide a crucial foundation, are the keys to each Arts discipline, are the keys to correlation and integration, incorporate cultural diversity, focus on appropriate technologies, and provide a foundation for student assessment. The national standards are organised into separate categories of Dance, Music, Theatre, and Visual Arts for grades K to 4, 5 to 8, and 9 to 12. Dance consists of seven content standards, which refer to demonstrating movement elements and skills, understanding choreography, creating and communicating by meaning, demonstrating critical and creative thinking skills, understanding cultural and historical significance, forming connections to health, and forming connections to other disciplines. Music consists of nine content standards, which refer to singing, performing on instruments, improvisation, composition, reading and notation, listening and analysing performance, forming connections to other disciplines, and understanding cultural and historical significance. Theatre consists of eight content standards, which refer to script writing, acting, designing productions, directing productions, researching cultural and historical connections, integrating other art forms, analysing productions, and analysing the social role of theatre. Visual Arts consist of six content standards, which refer to applying media, applying techniques and processes, conveying structures, choosing subject matter, understanding cultural and historical connections, evaluating art work, and forming connections with other disciplines. Each standard incorporates one content standard and sets of achievement standards, with the achievement standards for grades 9 to 12 being categorised as advanced and proficient. The *National Standards for Arts Education* states that particular resources should be used in Arts programs. Students in grades 5 to 8, and grades 9 to 12 should use texts to research cultural and historical contexts of the Arts, especially in relation to the theatre.

6.11.6 Civics and Government Standards

The national standards for Civics and Government are based on a curriculum framework, *Civitas*, developed by the Center for Civic Education in cooperation with the Council for the Advancement of Citizenship. Involving the contributions of more than sixty scholars as consultants and authors, *Civitas* provides a rationale for civic education based on a belief that citizens require a greater understanding of constitutional democracy, and explicates the ultimate goal of civic virtue in terms of civic dispositions and commitment. *Civitas* proposes that civic education should consist of two categories of objectives: three central aspects of active civic participation in governing and managing groups, monitoring public policy, and influencing public policy; and knowledge about American government, non-Western government, and the role of the citizen (Quigley and Bahmueller, 1991).

The project to develop national standards for Civics and Government was initiated by the Center for Civic Education with the formation of the 26-member National Advisory Committee and the 42-member National Review Committee, both of which first met in the autumn of 1992 (Bahmueller and Branson, 1993). In March and April of 1993, public hearings were held at eight regional meetings across the United States to develop the first draft of the national standards, which was completed in April 1993. Successive drafts were reviewed by the National Scholars Review Panel, the National Conference of State Legislatures' Civic Education Task Force, the Council of State Social Studies Specialists' Review Panel Steering Committee, an English as a Second Language Review Committee, teacher review panels, state review committees, and independent reviewers. In June 1993, a second draft of the national standards was produced, which took into account comments of the review panels. Produced in October 1993, a third draft was reviewed by the general public. A fourth draft, completed in January 1994, was reviewed at an open forum conducted by the Center for Civic Education and the National Council for the Social Studies in Washington, DC. The results of this final review were used to prepare the national standards, which were released at a ceremony and press conference held in the United States Supreme Court in November 1994.

The *National Standards for Civics and Government*, published by the Center for Civic Education (1994), provides a rationale for education in Civics and Government based on giving increased attention to civic education in the school curriculum by developing intellectual and participatory skills. The national standards are presented in three sets of content standards for grades K to 4, 5 to 8, and 9 to 12. Each set is organised into five parts. Grades 1 to 4 standards refer to government, the values and principles of American democracy, the embodiment of American democracy in government, the relationship of the United States to other nations and world affairs, and the roles of the citizen in American democracy. Standards for grades 5 to 8 and 9 to 12 refer to civic life, politics and

government, the American political system, the embodiment of American democracy in government, the relationship of the United States to other nations and world affairs, and the roles of the citizen in American democracy. Each part contains several content standards, each of which incorporates a content summary and rationale, and sets of achievement standards. An illustrative performance standard is appended. The *National Standards for Civics and Government* states that curriculum developers involved in developing high quality curricular programs, textbooks and other materials, form a principal audience for the national standards.

6.11.7 Geography Standards

In response to concerns about the lack of geographical knowledge and skills understood by American students, the Association of American Geographers (AAG) commissioned the Committee on Geography and International Knowledge to identify what college students and adults should know about geography (Association of American Geographers, 1982). This led AAG and the National Council for Geographic Education (NCGE) to appoint a Joint Committee on Geographic Education in 1982 to prepare a framework for secondary school geography, which was expanded to include elementary school geography. Published by the National Council for Geographic Education and Association of American Geographers (1984), the framework outlined five fundamental themes for geography across grades K to 12. These themes were location, or position on the Earth's surface, place, encompassing physical and human characteristics, relationships within places concerned with human and environmental interactions, movement in terms of relationships between places, and regions, concerning their formation and dynamics. To achieve the goals outlined in this framework, representatives of AAG, NCGE, the National Geographic Society (NGS) and the American Geographical Society (AGS) formed the Geographic Education National Implementation Project in 1985. This project played an important part in developing materials, reviewing teacher certification standards, providing institutes and workshops for teachers, creating leadership among teachers, and advising groups preparing diagnostic and competency tests in geography. At the same time, NGS created a geography education program to develop statewide alliances between teachers and university geographers for geographic education (Petersen et al., 1994).

In June 1991, the National Assessment Governing Board contracted CCSSO to develop a framework for assessing geographic knowledge of students in grades 4, 8 and 12 during 1994. A planning committee of teachers, curriculum coordinators, geography educators, academic geographers, assessment experts and lay people worked under the guidance of a steering committee to develop the framework through a process of consensus over an eight-month period. Drawing on the five themes identified by the Joint Committee on Geographic Education, the framework specified three content areas: space and place;

environment and society; and spatial dynamics and connections (National Assessment Governing Board, n.d.).

The development of national standards for Geography represented an extension of these earlier projects. NCGE, AGS, AAG and NGS used a broad-based process to consult all the major geographic organisations in the United States. Members of these organisations were represented on six committees. Eight primary authors formed the writing team. Experienced teachers and geography educators made up the fourteen-member Standards Writing Committee. Talented scholars made up the four-member Content Development Committee. The nine-member Content Advisory Committee consisted of specialists in sub-fields of geography. The eight-member Environmental Education Committee comprised specialists in environmental education. The 26-member Committee of Advisors comprised geographers selected from higher education, government and industry. In addition, an International Committee of geography educators drawn from Australia, Canada, Chile, Finland, France, Germany, Hong Kong, Japan, Netherlands, the Peoples Republic of China, Russia, South Africa, South Korea, Spain, Sweden, Switzerland, and the United Kingdom contributed independent reviews of the standards. The 20-member Oversight Committee and the 14-member Ex Officio Committee, made up of policy-makers, educators, parents and business leaders, oversaw the project. In developing the national standards, the project committees examined curriculum guides and materials used for geography in foreign countries as well as in the United States. Once each of the three drafts for the national standards had been developed, they were disseminated to more than 2,000 selected individuals, 100 state social studies and science coordinators, 750 geography teachers, state and local boards of education, professional associations, and business leaders for review. Further input was received at public hearings held between September 1992 and May 1994 in nine locations: Santo Domingo, Dominican Republic; Detroit; Gainesville, Florida; Greeley, Colorado; Atlanta; Nashville; Chicago; San Francisco; and Washington, DC.

Geography for Life: National Geography Standards 1994, written by Bednarz et al. (1994), is based on a rationale for Geography education realised through three components. The first component is subject matter. The second component is a set of five skills consisting of asking geographic questions, acquiring, organising and analysing geographic information, and answering geographic questions. The third component is two geographical perspectives, spatial and ecological. The subject matter of Geography is organised into six essential elements: the world in spatial terms; places and regions; physical systems; human systems; environment and society; and the uses of geography. Grouped according to appropriate essential elements, the national standards are organised into three sets of 18 content standards for grades K to 4, 5 to 8, and 9 to 12, which incorporate sets of achievement and performance standards. Using the national standards for interpreting

student achievement is illustrated through narratives for grades 4, 8, and 12, based on three levels of proficiency: aspiring to standard; at standard; and beyond standard. The conclusion discusses the role of parents in Geography education. *Geography for Life: National Geography Standards 1994*, states in the first standard that maps and other geographic representation, reference materials, and computer-based technologies should be used. By the end of grade 4, students should be able to use geographic representation, reference materials, and computer-based technologies. By the end of grade 8, students should be able to use geographic representation, reference materials, and computer-based technologies. By the end of grade 12, students should be able to use a range of geographic representation, reference materials, and computer-based technologies in combination.

De Souza and Munroe (1994) reported that the consortium proposed supporting implementation of the national standards with a variety of activities, including publication of a curriculum guide for teachers and curriculum developers, and several projects to develop materials. Three projects to develop materials that reinforced the national standards were reported (Hill, 1994; Salter and Salter, 1995). First, the University of Colorado developed over a five-year period a set of materials, *Geographic Inquiry into Global Issues*, for secondary schools, which integrates goals of teaching responsible citizenship, modern geographic knowledge, and critical thinking. Published by Encyclopedia Britannica (1994), the set includes print lessons, full-colour dry-erase atlases, colour bulletin board posters, an interactive CD-ROM in both English and Spanish, a geography reference tool, Geopedia, and three videodisks. Second, the Association of American Geographers developed a textbook program, *Activities and Readings on the Geography of the United States*, for secondary schools, as the first phase of a two-phase project. Intended to develop the ability to see meaning in the landscape, to use maps as analytical tools, and to learn to apply the spatial perspective to problems, the program was published by the National Geographic Society. The second phase involved developing a CD-ROM on United States geography over a three-year period. Third, the Minnesota Alliance for Geographic Education, based in Macalester College at St Paul, assembled and edited more than 1,000 teacher-developed lessons from teacher projects, conducted in national summer institutes on geography and educational leadership, onto a CD-ROM, *Geolinks*, using Macintosh Hypercard software to support the Minnesota geography curriculum.

6.11.8 English Language Arts Standards

Myers (1994a) related the development of national standards for English Language Arts to two previous reform efforts. The first involved a series of meetings leading to the publication of the report, *Reorganisation of English*, in 1917. The second involved a series of conferences and projects: the Basic Issues Conference of 1959; Project English in 1961; and the Dartmouth Conference in 1966. Myers concluded, however, that these earlier

movements were distinguished from the national standards movement in that learners were seen as passive, meaning was seen as universal for all times, and the purpose of English Language Arts was the learning of decoding skills.

Following similar initiatives taken by other professional subject associations in the 1980s, several organisations of English teachers, collectively known as the English Coalition, took up the challenge of reaching a consensus about curriculum content for English Language Arts. The curriculum should shift from an emphasis on drills to talking and writing for functional purposes, and should be based on an educational model of learning. The English Coalition also proposed a bill of rights, presented ideas for restructuring schools, and recommended alternative approaches for assessment. The discussion over curriculum content for English Language Arts stimulated by this debate, however, merged with the initiative undertaken to set national standards.

In the summer of 1992, the Center for the Study of Reading at the University of Illinois, the National Council of Teachers of English (NCTE), and the International Reading Association (IRA) initiated the development of national standards at a meeting of their boards held in Chicago. Following funding of the project in September 1992, a National Board was appointed to oversee the Standards Project for English Language Arts. The work of the project was accomplished by three project task forces, which developed standards for early, middle and high school levels. After an initial meeting in January 1993, the project task forces developed a draft document, called a public sampler, which outlined the history, guiding principles, the framework, and examples of language, reading and writing standards. Following scrutiny at the annual conventions and regional meetings of NCTE and IRA in 1993, the public sampler was distributed for review and comment through a network of more than 300 chartered task forces representing school and community groups (Pearson, 1993; Myers, 1994b). In January 1994, the project task forces reviewed the comments received from the chartered task forces, and revised the existing standards or developed new standards.

The process for continuing development of the national standards was checked by refusal on the part of the United States Department of Education to renew federal funding for the last eighteen months of the three-year project. This dispute arose because of philosophical differences between the subject associations and the Department of Education's Fund for Improvement and Reform of Schools and Teaching (FIRST), which centred on four issues. The inclusion of opportunity-to-learn standards, the emphasis on learning process instead of product-oriented statements, the failure to address a particular canon for children's literature and standard spelling versus invented spelling, and the complexity of the project's organisational structure formed controversial aspects. FIRST convened a special

review panel, which met with the project's administrators at the University of Illinois in January 1994 to evaluate the continuation proposal, submitted by the subject associations in November 1993. The panel recommended discontinuing further federal funding for the project from March 1994. In the meantime, NCTE and IRA agreed to continue working together to develop national standards as an independent project, although the Center for the Study of Reading left the consortium. Although the United States Department of Education proposed launching a new competition for a grant to be held in June 1994, it decided against this action following lobbying by English educators and subject associations. In December 1994, the United States Department of Education announced it was leaving NCTE and IRA to continue developing the national standards in a partnership with CCSSO.

NCTE and IRA distributed a second document to the chartered task forces in April 1994. On the basis of responses, the project task forces developed a new draft document, which was distributed to the chartered task forces in October 1994. Responses received from the chartered task forces were considered in a working session held at the NCTE annual convention in November 1994. In February 1995, representatives of IRA and NCTE developed a consensus draft of standards by merging the two sets that had been developed independently. The consensus draft was circulated to the chartered task forces in the spring and summer of 1995. On the basis of responses, a final draft was prepared and distributed to more than 2,500 individuals and groups for review in October 1995. The results of this review were used to prepare the final version of the national standards, which was released at a public ceremony held at an elementary school in Washington, DC, in March 1996.

The *Standards for the English Language Arts*, published by the National Council of Teachers of English and the International Reading Association (1996), is organised into four sections. The first section establishes a rationale for English Language Arts standards based on three core beliefs. English Language Arts standards prepare students for present and future literacy demands, present a shared vision of literacy education, and promote equity and excellence for all students by taking into account learning how to learn, equal access to educational resources, an adequate number of knowledgeable teachers, and safe, well-equipped schools. The second section presents a model for language learning involving reading, writing, speaking, listening, viewing and visual representation, in which interaction occurs in the context of three dimensions: content; purpose; and development. The third section explicates 12 national standards concerned with reading texts, reading processes, creating texts, research and inquiry, multicultural language arts curriculum, and social and personal significance of language use. The fourth section examines the implementation of the national standards by illustrating actual classroom practices through

a series of 18 vignettes: seven relating to the elementary school level; six relating to the middle school level; and five relating to the high school level. The *Standards for the English Language Arts* states that particular resources should be used in the English Language Arts curriculum. Students should read a wide range of texts: literary texts, including classic, contemporary and popular narratives, poems, songs, and plays; student-produced texts; technological resources; mass media texts; socially significant oral and written texts; and everyday texts. Teachers and students should select texts by applying a range of criteria: relevance to students' interests; relevance to students' roles; literary quality; balance and variety in form, style and content; complexity; representative social content; and thematic relationships.

IRA and NCTE developed three series of professional materials to assist implementation of the national standards. Intended to support teachers in helping students develop higher English language arts skills, the Standards in Practice Series consists of four books designed for grades K to 2, 3 to 5, 6 to 8, and 9 to 12. The Standards Consensus Series provides four guides to assist teachers align their teaching practices in key topics to the national standards. Each of the guides is based on a consensus about each topic, revealed from a survey of national, state and local curriculum documents. The Standards Exemplar Series, which illustrates how the standards are embodied in student work, consists of three books designed for grades K to 5, 6 to 8, and 9 to 12.

6.11.9 Foreign Language Standards

In April 1978, President Jimmy Carter established the President's Commission on Foreign Language and International Studies to examine the deteriorating competence of American students in foreign languages and to bolster the United States' commitment to honour the Helsinki Final Act. The Helsinki Final Act was the outcome of a 35-nation summit meeting of the Conference on Security and Cooperation in Europe, held in Helsinki, Finland, in July 1975, which called on signatories to provide educational programs to strengthen the prospects for national security and international peace. The 24-member President's Commission on Foreign Language and International Studies was charged with assessing the need for foreign language specialists and their employment prospects, recommending appropriate foreign language programs for all educational levels and types of support, and reviewing existing legislative provisions to identify changes for implementing its recommendations. In concluding that foreign language and international studies were being neglected, the President's Commission on Foreign Language and International Studies (1979) presented 65 recommendations, referring to funding, policy and program planning in seven priorities. Establishing foreign language and international education as a high national priority, teaching foreign languages at the elementary and secondary levels, teaching and research in universities, international educational exchanges, citizen

education in international affairs, business and labour needs abroad, and improving organisation within and outside government formed priorities.

The recommendations of the President's Commission on Foreign Language and International Studies formed the basis for developing national standards. A consortium, consisting of the American Council on the Teaching of Foreign Languages (ACTFL), the American Association of Teachers of French, the American Association of Teachers of German, and the American Association of Teachers of Spanish and Portuguese, guided the project. A seven-member Board of Directors and a 30-member Advisory Committee, comprising representatives from government, business, parent and educator bodies, were formed to oversee the project. The work of the project was accomplished by four task forces, two of which developed student standards for grades K to 12, and 13 to 16, whilst the other two developed teacher standards for entry level and accomplished teachers. Work on the national standards for students in grades K to 12 began in June 1993. The eleven-member K to 12 Student Standards Task Force developed a statement of beliefs about foreign language education, and administered a questionnaire survey to identify foreign language teachers' perceptions concerning issues relating to the national standards. Meeting on Cape Cod in August 1993, the K to 12 Student Standards Task Force examined research studies, reviewed curriculum documents from across the United States and foreign countries, identified issues and concerns, and revised the statement of belief into a statement of underlying principles. Task force members then worked independently on drafting statements for exit standards, which were discussed in a session at the ACTFL annual convention held at San Antonio, Texas, in November 1993. Following this discussion, the K to 12 Student Standards Task Force developed the first draft for the national standards, which was distributed for comments to a Board of Reviewers, consisting of members of the subject associations forming the consortium. On the basis of responses, the K to 12 Student Standards Task Force developed a second draft, containing major alterations, including reorganisation of the standards and sample progress indicators based on goals instead of grade levels. The second draft, containing the revised sections, was distributed to the Board of Reviewers in April 1995, whilst the K to 12 Student Standards Task Force completed some new sections at the same time. A final draft, prepared by merging the new sections and revisions to the second draft based on responses from the review, was completed by the K to 12 Student Standards Task Force in June 1995, and subsequently distributed to the Board of Reviewers for comments. The results of this review were used to prepare the final version of the national standards in November 1995.

The *Standards for Foreign Language Learning: Preparing for the 21st Century*, published by the National Standards in Foreign Language Education Project (1996), is organised into six sections. The first section presents a statement of philosophy encompassing goals for

competence in more than one language and culture, the outcomes of successful language and culture learning, and the curriculum role of language and culture education. The second section presents a rationale for developing content standards as a means of attaining second language proficiency. The third section describes the current status of second language education in the United States. The fourth section presents guidelines for applying the national standards to specific languages, and for learners from non-English speaking backgrounds. The fifth section describes three organising principles for the national standards: five goal areas; curricular elements consisting of the language system, communicative strategies, cultural content, learning strategies, content from other subjects, critical thinking skills, and technology; and the framework of interpersonal, interpretive and presentational modes. The 11 national standards, and sample progress indicators for grades 4, 8, and 12, are categorised within five goal areas. Communicating in languages other than English, gaining knowledge and understanding of other cultures, connecting with other disciplines and acquiring information, developing insight into the nature of language and culture, and participating in multilingual communities at home and around the world form the five goal areas. The sixth section examines the implementation of the national standards by illustrating actual classroom practices through a series of 34 learning scenarios. The *Standards for Foreign Language Learning: Preparing for the 21st Century* states that particular materials are appropriate for grades 4, 8 or 12. At grade 4, students should read poems, short folk-tales, and illustrated stories. At grade 8, students should read authentic literary texts, such as children's magazines, comic books and children's literature, selected by the teacher. At the grade 12, students should read authentic literary texts, poems, plays, short stories, novels, plays and other literature.

The development of national standards for foreign languages most commonly taught in American schools was supported by funds raised from the sale of copies of *Standards for Foreign Language Learning: Preparing for the 21st Century*. Subject associations developed sets of language-specific standards for Chinese, Latin and Ancient Greek, French, German, Italian, Japanese, Russian, Spanish and Portuguese. These sets were designed to provide additional guidance for language teachers to incorporate the concepts of the national standards into classrooms by providing discussion of the implications of the generic standards, sample progress indicators, and learning scenarios for specific languages. Following their completion, the nine sets of language-specific standards were integrated with the generic standards and published by the National Standards in Foreign Language Education Project (1999) as a single volume.

6.11.10 Social Studies Standards

National standards for Social Studies originated in efforts to establish a sequence for introducing social studies into the curriculum (Dyngneson and Gross, 1986; Jenness, 1990).

Early efforts by the National Educational Association and AHA to define the place of history in the curriculum were extended by the Commission on the Reorganisation of Secondary Education's Committee on Social Studies. In 1916, it established a sequence for social studies that became the standard framework for the secondary level. However, historians, who were disaffected by this reform, established a Commission on the Social Studies in 1934 under the auspices of AHA to revitalise the place of history in schools by promoting a disciplinary approach. Although the criticisms of academic historians about these developments continued during the 1940s and 1950s, the predominance of the new social studies movement introduced new teaching approaches during the 1960s. The expansion of the social studies to include new subjects in the 1970s led the National Science Foundation to fund the Social Science Education Consortium based at Boulder, Colorado, to conduct the Social Studies Priorities, Practices and Needs project. This project identified problems plaguing the social studies and presented a sequence focusing on the social roles of individuals (Morrisett, 1981).

In 1982, the National Council for the Social Studies (NCSS) formed a task force, which recommended a traditional sequence emphasising a citizenship approach. Lack of agreement over this issue led NCSS to appoint a committee in June 1988, which reviewed six alternative sequences published by NCSS in 1986, and proposed criteria for setting social studies sequences. In 1985, NCSS joined AHA, the Carnegie Foundation for the Advancement of Teaching and the Organisation of American Historians to form the National Commission on Social Studies in the Schools, which met for the first time in November 1987. Over a two-year period, the National Commission on Social Studies in the Schools examined the content, effectiveness of teaching, the goals and the priorities in social studies. In its final report, the National Commission on Social Studies in the Schools (1989) addressed concerns over the lack of synthesis and coherence by proposing a structure in the social studies for grades K to 12. In November 1992, the NCSS House of Delegates adopted a unifying definition of social studies stating that it is an integrated study of many social science disciplines intended to develop young people's capacities for making decisions as citizens. At the same time, NCSS released position statements on the curriculum, assessment, teacher education and professional development. A vision statement, stating that teaching and learning in social studies is powerful when it is meaningful, integrative, value-based, challenging and active, served as the foundation for developing national standards for Social Studies (National Council for the Social Studies, 1992).

In July 1992, the 11-member National Task Force on Standards in Social Studies, appointed by NCSS, began developing national standards by reviewing position statements and curriculum guidelines. In October and November of 1992, NCSS established three review panels. The NCSS Review Panel consisted of NCSS leaders and members of constituent

organisations. The Social Studies Teacher Review Panel was made up of social studies teachers. The National Review Panel comprised representatives from subject associations, community and civics groups, business and industry leaders, and government agencies. In addition, student focus groups, representative of the national pupil population, more than 800 schools across the United States, and members of the general public were consulted during the review process. The National Task Force revised the national standards on the basis of comments received from these groups during a review of the first draft conducted between October 1992 and January 1993. A second draft was presented at public hearings held at state and regional meetings during March and April of 1993, as well as being reviewed by the panels and student focus groups. The National Task Force revised the second draft between May and August of 1993, and then circulated the third draft for final comments. Following the final period of review late in 1993, the national standards were revised by the National Task Force, and then presented to the NCSS Board of Directors for approval in April 1994.

Expectations of Excellence: Curriculum Standards for Social Studies, published by the National Council for the Social Studies (1994), is organised into six sections. The first section presents a rationale for social studies programs in schools by examining seven issues. The purpose of social studies programs is defined as promoting civic competence, integrating knowledge, skills and attitudes, helping to construct a base of knowledge and attitudes, and reflecting changes in the field. Excellence in social studies is achieved by supporting the common good, adopting common and multiple perspectives, and applying knowledge, skills and values to civic action. The national standards are met through public commitment, time and resources, principles of teaching and learning, and schools as places of learning. The purpose of the national standards is to provide a program framework, a guide for curriculum decisions with examples of practice. The organisation of the national curriculum standards is outlined. The audience for the national standards is specified. The national standards are related to other standards in the field. The second section presents the national curriculum standards, serving the purposes of a framework for social studies programs in grades K to 12 and a guide for making curriculum decisions. Social studies programs should include experiences across ten thematic strands: culture; time, continuity, and change; people, places, and environments; individual development and identity; individuals, groups, and institutions; power, authority, and governance; production, distribution, and consumption; science, technology, and society; global connections; and civic ideals and practices. The third section presents reference charts for each of the thematic strands, specifying performance standards across three levels: early grades; middle grades; and high school.

6.11.11 Physical Education Standards

In 1986, the National Association for Sport and Physical Education (NASPE) appointed an Outcomes Committee, which defined what a physically educated person should know and be able to do. The National Association for Sport and Physical Education (1992) published the findings of this work as a set of 20 outcome standards and sample benchmarks for selected grades. Following completion of this work, NASPE appointed an 18-member Standards and Assessment Task Force, which began its work in the spring of 1992 by clarifying the content of physical education and then developing assessment guidelines. Draft statements of the national standards and assessment guidelines were disseminated for review through NASPE structures to members, presented at the national conventions of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) in 1993 and 1994, and at six district AAHPERD conventions, and many state AAHPERD meetings. Selected leaders in physical education, and representatives from other subject areas and education organisations also reviewed the national standards.

Moving into the Future: National Standards for Physical Education, published by the National Association for Sport and Physical Education (1995), presents general descriptions of the national standards. The national standards are organised into seven sets for grades K, 2, 4, 6, 8, 10 and 12, each presenting further definitions, key points of emphasis, and sample benchmarks. Seven content standards refer to what physically educated students should know and be able to do. First, they demonstrate competency and proficiency in movement forms. Second, they apply movement concepts and principles for learning and developing motor skills. Third, they exhibit a physically active lifestyle. Fourth, they achieve and maintain health-enhancing physical fitness. Fifth, they demonstrate responsible personal and social behaviour in physical activity settings. Sixth, they demonstrate understanding and respect for differences among people in physical activity settings. Seventh, they understand that physical activity provides opportunities for enjoyment, challenge, self-expression and social interaction. The national standards conclude by presenting a range of sample assessment techniques appropriate for assessing student achievement of specific content standards.

In the summer of 2002, the National Association for Sport and Physical Education appointed the National Physical Education Standards Revision Committee to review the standards and consider questions, recommendations and problems forwarded by teachers, teacher educators and others. The committee developed a revised draft of the national standards, which was presented for review by practitioners, curriculum specialists, administrators and professional preparation faculty at the national convention of AAHPERD in 2003. Following revision of the draft, the National Association for Sport and Physical Education (2004) released the revised national standards in March.

6.11.12 Health Standards

In June 1992, representatives from 38 national health, education and social service organisations met under the auspices of the American Cancer Society (ACS) to develop a national action plan for comprehensive school health education, which included a proposal for developing national standards. In July 1992, ACS, the Association for the Advancement of Health Education (AAHE), the American Public Health Association, the American School Health Association, and the Society of Directors of Health, Physical Education and Recreation formed the Joint Committee on National Health Education Standards. With funds provided by ACS, the Joint Committee met for the first time in July 1993 to plan activities and establish a time frame, which was then reviewed by CCSSO's State Collaborative Assessment of Student Standards Health Education Project. In October 1993, the Joint Committee's Subcommittee for Content Standards and Performance Indicators reviewed state health education documents and standards' documents from other disciplines, organised identified elements, and developed the first draft of the national standards. Following presentation of the first draft to the Joint Committee and its review by the membership of AAHE in April 1994, the Joint Committee's Subcommittee for Opportunity-to-Learn Standards drafted model opportunity-to-learn standards. After their review by CCSSO's State Collaborative Assessment of Student Standards Health Education Project, the draft was disseminated for a national review. The participating national education agencies and subject associations of health educators, 224 professional preparation programs in universities, and all state and territory education and health agencies reviewed the draft in June 1994. In August 1994, presentations and reviews of the national standards were conducted at seven state meetings of health education professionals, and at an international conference held in Mombasa, Kenya. Following review of comments received from organisations and individuals, the draft was revised and distributed in September 1994 to 46 health and education organisations, and more than 500 individuals for a second nationwide review. After comments from the review were analysed, the final draft was revised in December 1994.

The *National Health Education Standards: Achieving Health Literacy*, published by the Joint Committee on National Health Education Standards (1995), consists of five sections. The first section presents a rationale for the national standards based on an assumption that health education forms an integral element of educational reform, and that national standards will promote health literacy through critical thinking and problem solving, responsible and productive citizenship, self-directed learning, and effective communication about health matters. The second section outlines the elements of the national standards for grades K to 4, 5 to 8, and 9 to 11. They consist of seven national standards referring to knowledge of health content, and process and skills, a rationale statement for each standard, and performance indicators for grades 4, 8 and 11. The national standards are

correlated to two frequently used classifications of health content. First, they are related to six risk behaviours of tobacco use, dietary patterns contributing to disease, sedentary lifestyle, sexual behaviours resulting in HIV-AIDS, other sexually transmitted diseases and unintended pregnancy, alcohol and other drug use, and behaviours resulting in intentional and unintentional injury. Second, they are classified against the topics of community health, consumer health, environmental health, family life, mental and emotional health, injury prevention and safety, nutrition, personal health, prevention and control of disease, and substance use and abuse. The third section discusses the need for opportunity-to-learn standards to support the national standards, and presents sets of opportunity-to-learn standards for local education agencies, communities, state education and health agencies, teacher preparation in institutions of higher education, and national organisations. The fourth section describes key concepts used in developing the national standards, the process for their development, and assumptions underlying the national standards. The fifth section recommends that health literacy is supported by the strategies of national standards, performance indicators, development of health education curricula based on the national standards, delivery of health education, appropriate assessment techniques, professional development activities, and systemic changes specified in the opportunity-to-learn standards.

6.11.13 Economics Standards

Siegfried and Meszaros (1998) reported that the National Council on Economic Education (NCEE), the National Association of Economic Educators, the Foundation for Teaching Economics (FTE), and the American Economic Association's Committee on Economic Education formed a consortium to develop national standards. Although the United States Department of Education provided the consortium with funds in 1994 to develop the national standards, the project stalled in 1995 when federal funds were withdrawn. Subsequently, NCEE obtained private funds from the Calvin K. Kazanjian Economics Foundation, the AT&T Foundation, and FTE to continue the project. In August 1995, NCEE formed a Steering Committee of representatives from the consortium, which then appointed an 11-member Writing Committee. The Writing Committee worked for two years developing and revising drafts of the standards in consultation with a Users Committee consisting of six economics teachers, and a Review Committee comprising five economics' academics. The final version of the national standards was presented at the American Economic Association conference held in New Orleans in January 1997.

The *Voluntary National Content Standards in Economics*, published by the National Council on Economic Education (1997), consists of 20 content standards. These address the topics of scarcity and choice, markets, competition and market power, markets in action, incentives, profit and the entrepreneur, property rights and the environment, labour markets, inflation

and money, actions of government, and international markets. Each national standard incorporates an outcome statement, a definition, and benchmarks for grades 4, 8, and 12.

Both FTE and NCEE supported implementation of the national standards with resources. In 1998, FTE published *The Economic Demise of the Soviet Union* for high school students, containing relevant national standards, a lesson plan, and a student activity for each of five topics. The topics cover opportunity cost - the Soviet choice for growth, missing markets and missing prices - the task of the planning ministry, incentives matter - the firm in the Soviet economy, private property rights - failure on the farm, and transaction costs - life in a Soviet household. In 1999, NCEE published *Virtual Economics: An Interactive Center for Economic Education*, a CD-ROM containing background information, professional references and a resource library of lesson plans aligned to the national standards. In addition, NCEE published three master curriculum guides of lessons for grades K to 2, 3 to 4, and 5 to 6, and a series of collections of lessons for the elementary, middle and high school levels. Subsequently, NCEE developed ECONnections, a searchable database of lesson plans adapted from these printed materials.

6.12 Implementation of the National Standards

The Goals 2000: Educate America Act specified that state education agencies should use the national standards as blueprints to develop and implement state standards and curriculum frameworks, which are aligned to state assessment systems. From July 1994, state education agencies applied to the United States Department of Education for Goals 2000 grants under Title III to develop and implement comprehensive educational improvement plans, which included establishing challenging state standards. The Goals 2000: Educate America Act required each state education agency to appoint a broadly representative panel to develop state improvement plans in consultation with the state governor and the chief state school officer. The United States Department of Education (1995) reported that this process had been initiated by 47 states during the first year. A subsequent report stated that 45 states had received Goals 2000 funds for the second year, and 19 states had had comprehensive plans approved for third-year funding (United States Department of Education, 1996). The Improving America's School Act of 1994 required each state to develop state content and performance standards for mathematics and reading by the 1997-1998 school year and assessments by the 2000-2001 school year appropriate for all students, including the disadvantaged. In 2000, the United States Department of Education reviewed the alignment of each state's assessment system with its content and performance standards to ensure they met requirements for funding Title 1 programs.

Following enactment of the No Child Left Behind Act, Secretary Paige convened a negotiating committee in March 2002, which received advice from 140 interested parties on

developing new standards and assessment provisions. In July 2002, Secretary Paige issued new proposals about requiring states to assess student progress against state standards and invited public comments to which 140 interested parties submitted over 700 comments. In November 2002, Secretary Paige released the final regulations, requiring each state to integrate annual yearly progress reports on student progress against the state's standards into the state's accountability system. By May 2003, each state was required to have state standards and assessments in reading language arts and mathematics for each of grades 3 to 8 and high school, and by 2005-2006 each state was required to have state standards and assessments in science for elementary, middle and high school.

6.13 Role of Materials

6.13.1 Development, Selection and Evaluation

The National Science Foundation developed and disseminated new materials, as well as evaluating available materials for science. The American Association for the Advancement of Science's Project 2061 evaluated science materials, and founded a centre to improve the development of materials. The Eisenhower National Clearinghouse for Mathematics and Science Education houses a collection of resources for science education.

6.13.1.1 National Science Foundation

The National Science Foundation played a crucial role in the curriculum reform movement funding key projects from 1956 until a review of its program in 1975 led to its major curriculum projects being discontinued in 1976. After reasserting its presence in education with the publication of *Educating Americans for the 21st Century* in 1983, the National Science Foundation initiated the Instructional Materials Development Program to ensure effective materials were made available for elementary schools, provide more 'hands-on' opportunities for students, and incorporate new research findings. Later this work shifted to the production of materials for the middle and high school levels. The Instructional Materials Development Program supports the development of materials, teachers' guides and assessment instruments to improve science, mathematics and technology from kindergarten to grade 12. Proposed materials must exhibit a coherent framework aligned to the national standards for Science or Mathematics, foster problem solving, and be based on current research in teaching and learning. Projects are developed and implemented by teams consisting of higher education faculty and teachers.

Beginning in 1997, the National Science Foundation funded eight dissemination centres to implement materials based on the national standards for Mathematics and Science. The K to 12 Mathematics Curriculum Center, established in the Education Development Center at Newton, Massachusetts, supported the implementation of 13 multimedia mathematics

materials developed through collaborative projects involving education organisations and publishing companies. Seminars were offered on the new materials, local leadership was built to support implementation of the materials, curriculum and assessment were aligned, and schools were assisted with curricular change. The Show-Me Center in the University of Missouri at Columbia supported the implementation of five middle school mathematics materials developed by collaborative projects involving education organisations and publishing companies by offering workshops related to the materials, together with an annual conference. The Consortium for Mathematics and Its Applications based at Lexington, Massachusetts supported the implementation of three elementary mathematics materials developed by collaborative projects involving education organisations and publishing companies by offering workshops related to the materials, together with professional development relating to the implementation of innovative mathematics materials. Curricular Options in Mathematics Programs for All Secondary Students, a project based at Ithaca College, New York, implemented five high school mathematics programs developed through partnerships between education organisations and publishing companies. The National Science Resources Center, operated by the National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine and the Smithsonian Institution, initiated the Leadership and Assistance for Science Education Reform model. Partnerships between eight regional sites in Washington, California, Oklahoma, South Carolina, Alabama, New Jersey, Pennsylvania and Rhode Island, publishing companies and corporations assisted school districts adopt and implement inquiry-centred science programs. The K to 12 Science Curriculum Dissemination Center, established in the Education Development Center at Newton, Massachusetts, supported implementation of 26 materials developed by the National Science Foundation. It worked with ten regional hubs in Indiana, Kentucky, Michigan, Montana, South Dakota, Oregon, Idaho, Colorado, Mississippi, Florida, Georgia and Alabama to present seminars to familiarise teachers, and to implement the materials in classrooms. The Center for the Enhancement of Science and Mathematics Education in Northeastern University at Boston created six regional centres across New England housing implementation advisors, who work with school districts to identify appropriate standards-based curricula and materials for mathematics and science education. Advisors use an evaluation instrument, developed by the regional centres, to select materials that meet local needs. Following development of a district implementation plan, a group of curriculum trainers chosen from a pool of more than 100 certified trainers, applies the plan to implement the selected materials. The Science Curriculum Implementation Center, established by the Biological Sciences Curriculum Study in 2000, supports implementation of National Science Foundation funded materials for high schools.

Early in 1996, the National Science Foundation began reviewing materials developed with National Science Foundation funds for middle school science to identify their characteristics and determine their quality (United States Department of Education, 1997a). The Middle School Science Study applied a four-stage procedure. First, a review panel of twenty scientists, science and technology educators, and science teachers reviewed a single material to trial an evaluation instrument developed by Inverness Research. Following the trial, the panel critiqued and revised the instrument, and agreed on a review procedure. The panel then divided into small working groups, consisting of a scientist, a science educator, a practitioner and experts on implementation and assessment. Working group members analysed assigned portions of the materials independently. Each working group then prepared a written summary for each material representing a consensus of their reviews, as well as providing feedback on the evaluation instrument and the review procedure. The panel was then constituted into new groups to examine the issues of the treatment of science content, approaches to teaching, approaches to assessment and equity, and strategies for implementation. Following presentation of the reports by each group, the panel prepared the summary findings of the review. A 14-member synthesis panel, consisting of scientists, curriculum developers and teachers, was convened to review the procedure and findings of the review, design strategies for disseminating the findings, and recommend future directions. The synthesis panel evaluated the review panel's summaries and recommendations, and developed an overall synthesis of the findings. The National Science Foundation (1997) reported that 13 of 19 materials, which gained high ratings, were characterised by having specific strengths in content and pedagogy, but contained limited assessment activities, failed to address equity issues, and lacked dissemination and implementation strategies.

6.13.1.2 American Association for the Advancement of Science

In 1991, the American Association for the Advancement of Science's Project 2061 began planning the development of a database for evaluated materials (United States Department of Education, 1997b; Roseman et al., 2001). However, the pool of available materials was too large for Project 2061 staff to evaluate. Therefore, an effort was initiated to develop a valid and reliable procedure for analysing materials on the basis of how well they were likely to contribute to the attainment of the benchmarks, taking into account their inherent content, and teaching and learning methods. The first step involved screening each material to determine if it merited in-depth analysis to identify learning goals. Each material that passed the preliminary inspection was subjected to content analysis to determine whether it matched specific learning goals, and instructional analysis to determine the match between its treatment of specific learning goals and what is known about student learning and effective teaching. Finally, a summary report was prepared on what each material could be expected to accomplish in terms of specific learning goals. In

developing this procedure, Project 2061 involved more than 100 teachers, teacher educators, materials' developers, researchers and scientists, organised into three-member teams. These teams evaluated small numbers of materials to identify and suggest modifications to the procedure, and then field-tested the procedure at Project 2061's six partnership sites.

With funding from the Carnegie Corporation, Project 2061 trained a team of 12 educators, scientists and mathematicians, who worked in pairs to analyse widely used materials for mathematics and science at a workshop held in Washington, DC, in the summer of 1998. Only four of 13 middle school mathematics materials received high ratings (American Association for the Advancement of Science, 1999), whilst none of ten middle school science materials received adequate ratings (Kesidou and Roseman, 2002). Seven of 12 high school algebra materials were adequate, but none of ten high school biology materials received adequate ratings. Examples drawn from the evaluated materials were included on a CD-ROM, *Resources for Science Literacy: Curriculum Materials Evaluation*, released in 2002.

With funding from the National Science Foundation and the David and Lucile Packard Foundation, Project 2061 convened three conferences for scientists, teachers, researchers, curriculum developers, publishers, editors, and authors. The first in March 2001 inquired into developing textbooks that promote science literacy. The second in October 2001 focused on improving science textbooks through research and development. The third in May 2002 examined what textbooks, assessment and professional development can contribute to policy and student learning. As a consequence of these conferences, Project 2061 formed a partnership with Michigan State University at East Lansing, Northwestern University at Evanston and the University of Michigan at Ann Arbor to establish the Center for Curriculum Materials in Science. Founded in October 2002, the Center for Curriculum Materials in Science undertakes four activities. First, it conducts research into the process for developing materials, materials' design, teacher learning and educative materials, policy, and assessment. Second, it develops modules on analysing materials for use in pre-service teacher education and in-service professional development, and conducts a process for teachers to examine the implementation of materials in their classrooms. Third, each partner university offers doctoral and post-doctoral programs on the design, analysis and implementation of science materials. Fourth, it offers a Knowledge Sharing Institute for its leadership, faculty, fellows, students, and invited speakers to discuss issues related to the design, selection and use of materials.

6.13.1.3 Eisenhower Regional Mathematics and Science Education Consortia

In September 1992, the United States Department of Education began funding the Eisenhower Regional Mathematics and Science Education Consortia across ten regions in the United States. Based in each regional educational laboratory, the consortia provide

technical assistance and professional development, supported by dissemination sites diffusing information about resources, and access centres for teaching local educators.

The core of this network, however, is the Eisenhower National Clearinghouse (ENC) for Mathematics and Science Education founded in 1992 as the national repository for current resources. Maintaining its main collection of resources in the Ohio State University at Columbus, ENC duplicates part of the collection in the George Washington University at Washington, DC. Donated by publishers, organisations and individuals, this collection consists of more than 19,000 print materials, videotapes, audiotapes, graphic images, software, kits and Internet resources on mathematics and science. Information on each resource, which has been catalogued by library and education professionals, is contained on a searchable database accessed on ENC's web site. This collection is supported by a collection of technology-related journals, magazines and newsletters, together with ENC publications.

6.13.2 Information Services

In April 1997, President Clinton released a memorandum to heads of federal agencies about expanding access to Internet-based educational resources for students, teachers and parents. Federal agencies were directed to determine within three months what resources could be made available to enrich the Internet as a tool for teaching and learning, and produce and make available new and expanded versions of these resources within six months. Two major initiatives, the Gateway to Educational Materials and Federal Resources for Educational Excellence, arose from this memorandum.

6.13.2.1 Gateway to Educational Materials

In September 1996, the United States Department of Education's National Library of Education sponsored the Gateway to Educational Materials (GEM) as a special project of the ERIC Clearinghouse on Information and Technology based at Syracuse University (Lowe, 1999). GEM's goal is to provide a searchable database of lesson plans, curriculum units and other educational materials available on federal, state, university, commercial and non-profit web sites to improve their organisation and accessibility for teachers. Following a demonstration of a prototype database to representatives of federal agencies and GEM's consortium members in June 1997, GEM's web site was launched in January 1998. In February 2001, GEM and Education.Au agreed to share their databases of on-line resources in the United States and Australia, and to improve methods for organising and collecting these resources.

A consortium of organisations providing these resources was formed and expanded to develop GEM. Once accepted as a GEM consortium member, an organisation's staff sends

GEM a list of its database fields. GEM staff maps the data to the GEM metadata element set and controlled vocabulary. The organisation's staff selects the syntax for database output by applying the GEM metadata elements and controlled vocabulary using the map created by GEM. Following the test of a sample output, the organisation determines a schedule for producing database output on a regular basis. The original consortium membership of 15 organisations had expanded in 2003 to almost 500 organisations from across the United States and foreign countries.

In the first year of GEM's operation, the development of a controlled vocabulary, technical mechanisms and training materials was commenced. After trialing the controlled vocabulary on AskERIC's virtual library's Internet collection, it was piloted on the web sites of three consortium members. In January 2002, the controlled vocabulary consisting of 21 elements derived from 15 Dublin Core elements, and a module, GEMCat, used to catalogue Internet resources, were released. In 2003, the controlled vocabulary and the module had been applied to catalogue more than 24,000 records of resources held in more than 350 Internet-based collections.

A series of studies have been undertaken to evaluate GEM. An initial evaluation of GEM, reported by Fitzgerald et al. (2000), reviewed the findings of four studies. The first study was an evaluation of GEM's design involving participants with expertise in computer science. The second study was an evaluation of GEM's accessibility and use involving Internet novices. The third study was an analysis of responses to an online survey. The fourth study consisted of expert reviews of GEM by three professionals. As a consequence of the findings of these studies, Fitzgerald et al. recommended that the GEM database should continue to expand, librarians and media specialists should be targeted to publicise the project, and curriculum correlation possibilities should be explored. A second evaluation of GEM, reported by Fitzgerald (2001), reviewed the findings of two studies. The first study involved focus group interviews with consortium members about their perceptions of GEM. The second study involved focus group interviews with 14 teachers about their perceptions of GEM. As a consequence of the findings of these studies, Fitzgerald recommended that GEM should be more actively promoted to teachers through professional development. A third evaluation of GEM, reported by Fitzgerald and McClendon (2002), examined the metadata elements from users' perspectives. The study involved 51 users exploring GEM in the course of their work, and providing evaluations of its performance in a formal academic assignment. The findings indicated that searching GEM was a challenge for users, although they were positive about the search strategy. The study identified that users found the elements of audience, subject, grade, keyword and description were most important. Although users found GEM to be a timesaving resource, they made suggestions to enhance its capability. A fourth evaluation of GEM, reported by

Fitzgerald and McClendon (2003), examined the value of GEM to consortium members and teachers. The study involved two focus group meetings with consortium members and teachers held at the annual meeting of the consortium members at the Biosphere near Tucson, Arizona, in December 2002. In addition, an analysis of unsolicited feedback provided by electronic mail identified that a range of consumers outside education used GEM. The findings indicated that users wanted searches to be limited to resource type, simplicity, time efficiency, and resource quality. Both consortium members and teachers identified marketing as a critical factor affecting its use.

6.13.2.2 Federal Resources for Educational Excellence

In June 1997, representatives from more than 30 agencies formed a working group to develop a web site, Federal Resources for Educational Excellence (FREE), to make federally supported educational resources available. Under the leadership of the United States Department of Education, the members of the working group were invited in April 1998 to form partnerships with teachers to develop and pilot Internet-based learning modules, and create an electronically networked community around each of the modules. Between May 1998 and September 2000, more than 340 teachers organised into ten teams developed and piloted on-line learning modules, consisting of student activities, teachers' guides, lesson plans, materials, primary documents, artefacts, scientific tools, data sets and other resources organised around a topic. These teams, known as the Consortium for Education, worked with the National Aeronautics and Space Administration, the United States Department of Energy, the NASA Langley Research Center, the United States Mint, the National Archives and Records Administration, the United States Department of Agriculture, and the National Park Service. The learning modules were linked to the national standards by applying GEM's controlled vocabulary, and posted on the FREE web site following completion of the projects in December 2000. The teams developed a toolkit, presenting a model process for other organisations to develop on-line learning modules. The toolkit outlines a 13-month time line consisting of the four phases of analysis, design, development and implementation, each including evaluation.

6.14 Conclusion

This review shows that the national reform strategy, first enacted as the America 2000 Excellence in Education Act in 1991 by President George H. W. Bush, arose from the need to provide greater coherence to the educational reform movement. The first and second waves of educational reform from 1983 to 1989 were characterised by a public debate on excellence in education ensuing from the release of a series of reports and studies. Several studies led to the implementation of small-scale reform efforts, but the lack of coherence between them underscored the need for a national reform strategy. This shortcoming led conservatives and liberals to reach a broad consensus on setting national standards based

in academic disciplines acknowledged in the National Education Goals, and providing scope for diverse state and local initiatives to set standards. Re-authorisations of the national reform strategy by President Clinton as the Goals 2000 Educate America Act in 1993, and by President George W. Bush as the No Child Left Behind Act in 2002 altered its detail, but not its substance.

Although the excellence debate emphasised the role of school reform projects as the main initiative for promoting educational reform, a shift towards the development of national standards as a means for improving student academic achievement occurred in 1991. In spite of the rejection of the concept of a 'national curriculum', the adoption of a core curriculum of basic subjects and the commitment to assess these subjects at regular intervals was an important constituent of the National Education Goals. Employing the national standards for Mathematics developed in the 1980s as a model, national subject associations developed national standards for 11 subject areas. The bipartisan political support evident at the commencement of these projects, however, dissipated following the controversy surrounding the national standards for History and the ongoing dispute over the national standards for English Language Arts. Although the conservative Right's attacks undermined the consensus for developing national standards following the election of Republican majorities to both houses of Congress in November 1994, standards-based reform was revitalised by several events. These included the second National Education Summit in March 1996, the re-election of President Clinton in November 1996, the State of the Union address in February 1997, the third National Education Summit in September 1999, and the fourth National Education Summit in October 2001. Enacted in January 2002, the No Child Left Behind Act strengthened standards-based reform by mandating requirements for the states to implement standards in the core curriculum of basic subjects for the first time.

The work of several of the national standards projects stimulated the development of various resources. However, the attention of policy-makers was drawn to the need for developing materials of high quality to support implementation of standards by the findings of research studies associated with the Third International Mathematics and Science Study (TIMSS). TIMSS' researchers argued that poor performances by American students resulted from curricula in American schools sacrificing depth for breadth, and textbooks covering less demanding content than textbooks from other high-achieving countries. Spurred by these findings, the United States Department of Education funded ENC to develop a collection of resources, and promoted Internet-based projects, such as GEM and FREE, to provide access to electronic resources. In addition, the National Science Foundation and the American Association for the Advancement of Science's Project 2061

undertook a range of activities to evaluate and improve the quality of materials for science education.

Organisations involved in science education applied different models for developing and implementing materials. The projects that the National Science Foundation funded in the curriculum reform movement and afterwards have applied the research, development and diffusion model, a variant of the planned change model characteristic of neomobilistic decision settings. They involved teams of academic scholars supported by teachers mounting ambitious efforts to develop and field-test materials, and workshops providing teachers with in-service training as the principle means for implementing the materials. Initiated by the American Association for the Advancement of Science in 1985, Project 2061 became increasingly involved with the evaluation of science materials from 1991. This element of Project 2061 employs the disjointed incremental model characteristic of incremental decision settings. The intention of Project 2061 to develop a database of materials led to teachers being trained to evaluate materials, the conduct of several small-scale projects to evaluate materials and the foundation of a centre to form a cadre of experts on research and development in science materials. These successive developments are characterised by small incremental changes, a focus on current needs and problems, and the application of problem analysis and successive approximation of a solution. ENC forms part of a consortium providing a network of facilities for implementing science education across the United States. This network represents those activities associated with diffusion in the planned change model.

The restriction of GEM and FREE to the organisation of available on-line resources rather than development of new on-line resources allowed policy-makers, curriculum developers and information specialists to apply elements from the planned change model in flexible and limited ways to design these databases. The planned change process involved researching the theoretical basis for change, developing a repository for the on-line resources through invention, design, construction and assembly, diffusing the on-line resources through dissemination and demonstration, and adopting the on-line resources through training, trial, installation and institutionalisation. GEM and FREE exhibited the key features of the planned change model by transforming from probing and exploratory exercises in the early stages to rigorous engineering and market research investigations in the later stages. Because such change is an expensive, high-risk proposition supported by little theoretical or extant knowledge, these initiatives benefited from the work previously accomplished by member organisations in developing on-line resources.

CHAPTER 7

STANDARDS-BASED REFORMS AT THE STATE LEVEL IN THE UNITED STATES

The translation of the national standards by state-level policy-makers and others into state standards represented the most critical challenge for developing curricula around clearly defined sets of expectations, and assessment systems that measured whether students are meeting these expectations. In spite of the demise of the proposal to establish the National Education Standards and Improvement Council with authority to certify the products of these translations, this role was assumed in a de facto fashion by several organisations. They issued reports viewed by many policy-makers and educators as offering endorsements on the progress and quality of the standards established by most of the fifty states. The reports of the studies conducted by these organisations concurred in finding that the states' commitments to developing and implementing standards were strong, although the quality of their standards was often deficient.

The purpose of this chapter is to examine the impact of standards-based reform in the states on aspects relating to the development, selection and use of resources. An assumption underlying this rationale is that the development, selection and use of resources are dependent on the processes and products of setting state standards, and subsequent curriculum planning. Since the states and local school districts have the primary responsibility for the selection of resources used in schools, the intent in this chapter is to identify specific strategies that each state employed to improve the development, selection and use of resources in the context of standards-based reform.

7.1 Studies on the Progress and Quality of State Standards

7.1.1 American Federation of Teachers

The American Federation of Teachers (AFT) published successive reports on the quality of state standards (Gandal, 1995; Gandal, 1996; Gandal, 1997; Glidden, 1998; Glidden, 1999; American Federation of Teachers, 2001). The quality of the standards was determined by analysing documents, such as regulations, manuals and guides, and interviewing officials from the fifty states and the District of Columbia. The draft findings were then circulated to each chief and deputy state school officer, so that inaccuracies and inconsistencies could be edited.

Although the criteria used to measure states' performances were refined over successive reports, the quality of standards, curricula, assessments and accountability was judged in 2001 against four sets of criteria. The first set, intended to measure the quality of states'

standards, consisted of four components. Whether they defined in every grade, or selected clusters of grades, the content students should learn? Whether they were sufficiently detailed, explicit, and firmly rooted in the content to lead to a common core curriculum? Whether specific subject matter was included in each of the four subjects? Whether they paid attention to both content and skills? The second set, intended to measure the quality of states' curricula, consisted of five components. Whether they lay out the learning continuum that shows the progression and development of knowledge and skills from grade to grade? Whether states identify resources that are aligned to the standards? Whether states provide information on methods to help teach standards? Whether states provide performance indicators to clarify the quality of student work required for the mastery of standards? Whether states disseminate lesson plans and units based on standards? The third set, intended to measure the quality of states' assessments, consisted of three components. Whether states list standards at each level in the four core subjects? Whether states report information on the alignment of standards and assessments? Whether states indicate the standards to be assessed? The fourth set, intended to measure the quality of states' accountability systems, consisted of two components. Whether states require and fund additional assistance for students having difficulty meeting standards? Whether states develop policies to encourage students to take learning more seriously by providing rewards and consequences based, in part, on state assessment results? In evaluating states' standards-based systems, AFT considered the coherence of these elements by judging whether the relationships were aligned, not aligned, or there was no relationship in terms of five issues. Are the tests aligned to the standards? If the answer to this question is 'yes', are all of the aligned tests based on strong standards? Are curricula developed in all of the aligned test areas? Are all promotion or graduation policies based on aligned tests? Do all promotion or graduation policies include intervention?

7.1.2 Editorial Projects in Education

With funds provided in 1995 by Pew Charitable Trusts, Editorial Projects in Education (EPE), the publisher of the weekly newspaper, *Education Week*, and the monthly journal, *Teacher Magazine*, initiated a project to produce an annual report on the condition of education in the states. The editors surveyed policy-makers, business leaders and educators to identify more than 75 indicators, which were compiled under four categories. In addition, a fifth category of student achievement was added by including data based on the percentage of students reaching proficiency on the National Assessment of Educational Progress examinations for reading in grade 4 and mathematics in grade 8. Staff writers researched more than fifteen years of the newspaper's archives, examined state-level reports, and interviewed experts to produce separate reports on each of the states.

States' performances were ranked across the four categories in successive reports (Editorial Projects in Education, 1997; Editorial Projects in Education, 1998; Editorial Projects in Education, 1999; Editorial Projects in Education, 2000; Editorial Projects in Education, 2001; Editorial Projects in Education, 2002; Editorial Projects in Education, 2003; Editorial Projects in Education, 2004). For the first category, the effort made to develop standards and assessment systems was assessed. For the second category, performance made in the professional development of teachers was assessed. For the third category, performance made in school organisation and effectiveness was assessed. For the fourth category, the quality and allocation of resources for education was assessed. States' progress in each category was graded as a percentile, as well as being ordered according to five ranks. For the first category, EPE reported for the first time in 2002 on whether each state had put in place a regular time line for revising state standards.

7.1.3 Thomas B. Fordham Foundation

In 1997, the Thomas B. Fordham Foundation (FF) based at Dayton, Ohio, commissioned experts in the five subjects of English, Geography, History, Mathematics and Science to develop criteria to judge the quality of state standards. Separate sets of criteria were developed to evaluate state standards' documents in each subject. The appraisal of English Language Arts standards employed 34 criteria organised under five categories: purpose, audience, expectation, and assumptions of the standards document; organisation of the standards; disciplinary coverage of the standards; quality of the standards; and anti-literary or anti-academic requirements or expectations. The appraisal of Geography standards employed two categories of criteria: general characteristics; and comprehensiveness and rigour. The appraisal of History standards employed 15 criteria organised under five categories: clarity; organisation; historical soundness; historical context; and absence of manipulation. The appraisal of Mathematics standards employed nine criteria organised under four categories: clarity; content; mathematical reasoning; and negative qualities. The appraisal of Science standards employed 25 criteria organised under five categories: purposes, expectations, and audience; organisation; coverage and content; quality; and negatives. Assisted by advisory committees, the experts applied their respective sets of criteria to rate state standards' documents from all states and the District of Columbia.

The findings of the analyses were published in five volumes. Stotsky (1997) reported on English Language Arts standards' documents from 28 states. Munroe and Smith (1998) reported on Geography standards' documents from 39 states. Saxe (1998) reported on History standards' documents from 38 states and the District of Columbia. Raimi and Baden (1998) reported on Mathematics standards' documents from 47 states. Lerner (1998) reported on Science standards' documents from 36 states. Subsequently, Finn et al. (1998) published a summary report, in which the numerical scores and letter grades for each state

were compiled. Two years later, Finn and Petrilli (2000) published a second summary report. Standards' documents from 48 states were covered for English Language Arts. Standards' documents from 46 states were covered for Geography. Standards' documents from 48 states were covered for History. Standards' documents from 49 states were covered for Mathematics. Standards' documents from 46 states were covered for Science.

7.2 Organisation of the State Reports

Each of the reports presented in the state-by-state analyses has been organised according to a set of 11 descriptors. These descriptors are Title of State Standards, Standards Grades, Components, Subjects, Grade Ranges, Developmental Process, Implementation Process, Revision Process, Degree of State Control over Materials' Adoption, Degree of Local Control over Materials' Adoption, and Strategies Relating to Materials. The data reported under Standards Grades were derived from reports published by AFT in 1995, 1996, 1997, 1998, 1999 and 2001, EPE in 1997, 1998, 1999, 2000, 2001, 2002, 2003 and 2004, and FF in 1998 and 2000.

In the reports published by AFT in 1995, 1996 and 1997, each state's grade was reported as a global judgment about the clarity and specificity of state standards in the four core subjects. Such a global judgment was based on whether the state standards are sufficient to lead to a common core of learning and to support real change in schools as reflected in five ranks on a scale. 'No' represents 'unusable' for standards that lack references to grade levels, and 'unsatisfactory' for standards that do not meet AFT's common core criterion by not providing sufficient detail, lacking depth in their content, providing only models not standards, or not establishing a common core. 'Yes' represents 'borderline' for standards requiring improvement, 'satisfactory' for standards that are strong enough to provide the basis for a common core curriculum, and 'exemplary' for standards, which deserve attention as guides for other states. In the reports published in 1998, 1999 and 2001, AFT changed the basis for judging the clarity and specificity of state standards to judgments on a subject-by-subject basis for the four core subjects according to a level-by-level analysis for elementary, middle and high school. For a state to be judged as having quality standards overall, at least nine of the 12 cells on this matrix needed to be clear and specific, and include the necessary content. States, whose standards were judged to be 'borderline', 'satisfactory' or 'exemplary' in the 1995, 1996 and 1997 reports, or had clear and specific standards in at least nine of the 12 cells in the 1998, 1999 and 2001 reports, are recorded as 'yes' for having met the AFT criteria. Those recorded as 'no' failed to meet the AFT criteria. AFT reported on curriculum development for the first time in the report published in 2001, establishing the basis for measuring curriculum development to judgments on a subject-by-subject basis for the core subjects according to a level-by-level analysis for elementary, middle and high school. For a state to be judged as having a basic curriculum at least three

of the five components must be developed at three levels across a subject for that subject to be included under a recording of 'yes' for 2001.

In the reports published by EPE, each state's EPE grade is reproduced as a grade and a rank. A grade ranging from 90 to 100 percent and a rank of 'A' or 'A-' indicates the state has adopted standards in the four core subjects. A grade ranging from 80 to 89 percent and a rank of 'B+', 'B' or 'B-' indicates the state has adopted standards in two or three subjects. A grade ranging from 70 to 79 percent and a rank of 'C+', 'C' or 'C-' indicates the state has developed standards in the four core subjects. A grade ranging from 60 to 69 percent and a rank of 'D+', 'D' or 'D-' indicates the state has developed standards in two or three subjects. A grade ranging from 50 to 59 percent and a rank of 'F' indicates the state has taken no action. In addition, a response of 'yes' or 'no' is recorded for 2002, 2003 and 2004 to indicate whether the state has a regular time line for revising standards.

In the reports published by FF, each state's FF grade is reported as a global judgment reflected in five grades: 'F' representing 'useless'; 'D' representing 'marginally useful'; 'C' representing 'useful'; 'B' representing 'notable'; and 'A' representing 'exemplary'.

7.3 Implementation in the States

Alabama

Title of State Standards: Alabama Course of Study

Standards Grades: AFT - 1995, no; 1996, yes; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: yes (English, Science, Social Studies); EPE - 1997, 93%, A; 1998, 88%, B+; 1999, 88%, B+; 2000, 88%, B+; 2001, 79%, C+; 2002, 79%, C+, revision: yes; 2003, 79%, C+, revision: yes; 2004, 82%, B-, revision: yes; FF - 1998, C-; 2000, B-

Components: The Alabama Course of Study, which organises content standards by strands, provides guidelines for school districts in planning, implementing, supporting and evaluating programs.

Subjects: Agriscience Technology Education; Arts Education; Business Education; Career and Technical Education; Computer Applications; Driver and Traffic Safety Education; English Language Arts; Family and Consumer Science Education; Foreign Languages; Health Education; Healthcare Science and Technology Education; Marketing Education; Mathematics; Music; Physical Education; Science; Social Studies; Technology Education; Trade and Industrial Education; and Visual Arts

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: Information about the origins of the Alabama Course of Study is unavailable.

Implementation Process: School district superintendents are required to use the Alabama Course of Study for directing curriculum development. Local boards of education are required to approve the Alabama Course of Study, and make copies available to teachers and interested citizens. In 2001, the Alabama Department of Education and the Alabama Supercomputer Authority designed the Alabama Learning Exchange, which was implemented in three phases. The first phase, launched in July 2002, presented the Alabama Course of Study, lesson plans and links to web resources. The second phase, launched in September 2002, provided zones for teachers to search resources and establish collaborative relationships. The third phase, launched in January 2003, provided zones for administrators and parents.

Revision Process: Undertaken on a rotation schedule over a six-year cycle, revision of the Alabama Course of Study is conducted by subject-based course of study committees, consisting of educators, business and professional people. Committees refer to the national standards, review standards from other states, attend national and state conferences, read professional literature, and consult interested groups in reaching consensus about the curriculum. Draft course of study documents, submitted to public review at the eight textbook review sites across Alabama, are revised on the basis of responses before being presented to the State Board for review and adoption. Science was revised in 1995. Agriscience Technology Education, Business Education, Family and Consumer Science Education, Healthcare Science and Technology Education, Marketing Education, Technology Education, and Trade and Industrial Education were revised in 1996. Health Education, Mathematics, and Physical Education were reviewed in 1997. Arts Education, Computer Applications, Foreign Languages and Social Studies were revised in 1998. English Language Arts, and Driver and Traffic Safety Education were revised in 1999. Science was revised in 2001. Career and Technical Education and Technology Education were revised in 2002. Health Education, Mathematics, and Physical Education were revised in 2003. Social Studies were revised in 2004.

Degree of State Control over Materials' Adoption: The State Textbook Committee selects a prescribed number of approved materials in each subject for the state list adopted by the State Board for a six-year adoption cycle. The state-level adoption process includes State Textbook Committee hearings with publishers, and public hearings by the State Textbook Committee following public reviews through displays at eight textbook review sites.

Degree of Local Control over Materials' Adoption: Local committees select materials from the state adoption list, which are adopted by city and county boards. City and consolidated county boards in urban areas may petition the State Board to adopt non-adopted materials for the secondary level.

Strategies Relating to Materials: The rotation schedules for the curriculum review and the state-level materials adoption cycles are sequenced. The Alabama Learning Exchange contains teacher-developed lesson plans.

Alaska

Title of State Standards: Alaska Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: yes (Social Studies); EPE - 1997, 79%, C+; 1998, 69%, D+; 1999, 67%, D+; 2000, 72%, C-; 2001, 61%, D-; 2002, 68%, D+, revision: yes; 2003, 65%, D, revision: no; 2004, 71%, C-, revision: no; FF - 1998, D+; 2000, D-

Components: The Alaska Standards present content and performance standards. The Alaska Frameworks, which present content and performance standards, teaching and learning methods, assessment techniques, and lists of professional, reference and electronic resources, provide guides for district curriculum development committees. The Reference Kits provide collections of reference books, articles and tapes for district curriculum development committees.

Subjects: Arts; English Language Arts; Geography; Government and Citizenship; History; Library Information Literacy; Mathematics; Science; Skills for a Healthy Life; Technology; and World Languages

Grade Ranges: The content standards are not grade specific, but the performance standards are grouped for 5 to 7, 8 to 10, 11 to 14, and 15 to 18 year-old students.

Developmental Process: In 1984, the Alaska State Board of Education developed model curriculum guides, and passed regulations requiring school districts to employ six-year curriculum review cycles. In order to guide long-term improvement of Alaska's educational system, the State Board adopted seven broad educational goals in 1987. In November 1991, the Governor's Blue Ribbon Commission, composed of 21 prominent Alaskans appointed by Governor Walter Hickel, identified ten broad areas of educational concerns, which were examined by ten committees in a reform effort known as Alaska 2000. In October 1992, the State Board approved the Alaska 2000 recommendations, including the development of student academic standards over three rounds. Groups of educators, representatives of the business sector, parents and students developed drafts for the student academic standards, which were reviewed at public hearings held across Alaska. The State Board adopted Alaska Standards for Mathematics, Science and English Language Arts in mid 1994, Geography, Government and Citizenship, History, and Skills for a Healthy Life in November 1994, and Technology, and World Languages in October 1995. In December 1999, the State Board adopted Alaska Standards for Library Information Literacy. Consisting of educators and subject specialists, framework development committees developed draft Alaska Frameworks, which were presented for field reviews across Alaska before being revised. Alaska Frameworks for English Language Arts, Mathematics and Science and Social Studies were approved in 1995, Arts and World Languages in 1996, and Skills for a Healthy Life in 1997. In 1998, the Alaska Legislature

passed the Quality Schools Initiative, requiring schools to adopt performance standards in reading, writing and mathematics approved by the State Board in January 1999.

Implementation Process: The Alaska Department of Education recommended that school districts should incorporate the Alaska Standards into the next six-year curriculum review cycle following their adoption. The recommended process involved creating a functional and collaborative procedure, conducting a curriculum inventory, developing curriculum and assessment guidelines, creating teaching and learning approaches that support the curriculum and assessment guidelines, identifying resources and determining budgetary demands, and providing professional development opportunities for district personnel. The reform effort, Alaska 2000, culminated in the Alaska Education Summit in October 1996 at which representative teams from 40 school districts developed action plans. The teams implemented these plans in their communities by involving local educators.

Revision Process: No process has been determined for revising the Alaska Standards.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The reference kits contain lists or copies of bibliographies of resources, lists of recommended resources, or evaluation forms for selecting resources.

Arizona

Title of State Standards: Arizona Academic Standards

Standards Grades: AFT - 1995, no; 1996, yes; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 76%, C; 1998, 77%, C+; 1999, 86%, B; 2000, 87%, B+; 2001, 77%, C+; 2002, 77%, C+, revision: no; 2003, 77%, C+, revision: no; 2004, 85%, B, revision: no; FF - 1998, B+; 2000, B+

Components: The Arizona Academic Standards present content and performance standards.

Subjects: Arts; Comprehensive Health and Physical Education; Foreign and Native Language; Language Arts; Mathematics; Science; Social Studies; Technology; and Workplace Skills

Grade Ranges: readiness (K); foundations (1 to 3); essentials (4 to 8); proficiency (9 to 12); and distinction (high school honours).

Developmental Process: Appointed to each subject in 1995, standards design teams used essential skills documents, which were last revised by committees of teachers and lay people in the 1980s, as a basis for developing new academic standards. Following several academic summits held in Phoenix, each Standards Design Team developed two drafts, one for public consultation and the other for review by the Arizona State Board of Education. Following revisions based on responses from the public consultation and State Board review third drafts were then submitted to a State Board committee, which worked with

the standards design teams to make revisions. This process led to the development of fourth drafts, which were presented for State Board review and adoption. Arizona Academic Standards were adopted for Language Arts (Reading and Writing) and Mathematics in August 1996, and Language Arts (Listening and Speaking, and Viewing and Presenting) and Workplace Skills in March 1997. Arizona Academic Standards were adopted for Arts, Comprehensive Health and Physical Education, and Foreign and Native Language in April 1997, Science in June 1997, Social Studies in March 2000, and Technology in September 2000.

Implementation Process: The Arizona Department of Education provided a series of presentations at ten sites across Arizona in October 1997 to introduce standards-based reform to educators and the public. The Department of Education offered five workshops on standards for all students, implementing standards in the classroom, grading and reporting, aiming for success, and data driven instruction covering standards-based education. In addition, workshops on six trait writing and mathematics were offered. Designed for 50 to 100 participants, each workshop assisted educators from local school districts, curriculum and professional development specialists, university faculty, business leaders, school board and community members to implement the Arizona Academic Standards, and to learn about Arizona's Instrument to Measure Standards. In 2002, the Department of Education required the governing board, superintendent and principal of each school to affirm a declaration of curricular alignment to the Arizona Academic Standards.

Revision Process: No process has been determined for revising the Arizona Academic Standards.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: In 1995, the State Board discontinued the policy of state-level adoption of textbooks, supplementary materials and computer courseware in order to eliminate a costly, cumbersome procedure.

Arkansas

Title of State Standards: Arkansas Curriculum Frameworks

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 83%, B; 1998, 85%, B; 1999, 71%, C-; 2000, 72%, C-; 2001, 66%, D; 2002, 68%, D+, revision: yes; 2003, 80%, B-, revision: yes; 2004, 79%, C+, revision: yes; FF - 1998, F; 2000, F

Components: The Arkansas Curriculum Frameworks, which organise content standards and student learning expectations by strands, provide guidelines for school districts in

planning, implementing, supporting and evaluating programs. The Sample Curriculum Models list benchmarks, assessment techniques and strategies for teaching and learning.

Subjects: Arkansas History; English Language Arts; Fine Arts; Foreign Language; Mathematics; Physical Education and Health Education; Social Studies; and Science

Grade Ranges: K to 4; 5 to 8; and 9 to 12

Developmental Process: Early in 1983, Governor Bill Clinton appointed the Education Standards Committee, which held public hearings in all 57 counties to develop recommendations for systemic reform of Arkansas' educational system. In October 1983, the Arkansas General Assembly passed the Quality Education Act consisting of a package of reforms, including the development of course content guides establishing minimum requirements for all subjects. In 1991, the Arkansas General Assembly passed Act 236 requiring changes to the curriculum in Arkansas' schools to emphasise teaching students to think, and master challenging subject matter. Between 1992 and 1996, subject-based committees, consisting of teachers, subject supervisors and higher education faculty, developed the Arkansas Curriculum Frameworks, based on adopted Arkansas Learner Outcomes.

Implementation Process: Each school district developed local curriculum documents predicated on the Arkansas Curriculum Frameworks. As an element of this process, some school districts created samples of local curriculum documents for each subject in advance of other districts.

Revision Process: During 1998, all school districts were surveyed to identify any changes that should be made to the Arkansas Curriculum Frameworks. As a consequence, a decision was made that the Arkansas Curriculum Frameworks should be reviewed over a six-year rotation schedule. Representing the initial round in the rotation schedule, revised Language Arts and Mathematics frameworks, published in 1998, were the first to incorporate sample curriculum model documents to assist school districts implement them. Revised Foreign Language and Science frameworks were published in 1999. A revised Social Studies framework was published in 2000. Revised visual arts and music strands in the Fine Arts framework were published in 2001. Revised Arkansas History, and Physical Education and Health Education frameworks were published in 2002. A revised English Language Arts framework was published in 2003.

Degree of State Control over Materials' Adoption: Subject-based state selecting committees advise the State Board about the selection of a prescribed number of approved materials in each subject for the state list adopted by the State Board for a six-year adoption cycle. The state-level adoption process includes State Selecting Committee hearings with publishers, and publishers' caravans.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. Five or more local school districts may petition the Arkansas Department of Education to adopt

non-adopted materials, and a local school district may petition to adopt innovative materials.

Strategies Relating to Materials: The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. The Department of Education provides the state-adopted list on its web site. In 1998, the Black History Task Force compiled *African and African American History: A Resource Guide for Arkansas Teachers*, which includes lists of materials. The Educators Book Depository of Arkansas offers a catalogue of state-adopted materials on its web site.

California

Title of State Standards: California Content Standards

Standards Grades: AFT - 1995, yes; 1996, no; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: yes (English, Mathematics); EPE - 1997, not available, I; 1998, 78%, C+; 1999, 80%, B-; 2000, 89%, B+; 2001, 85%, B; 2002, 85%, B, revision: no; 2003, 88%, B+, revision: no; 2004, 86%, B, revision: no; FF - 1998, B; 2000, A-

Components: The California Content Standards are organised by strands. The California Curriculum Frameworks provide school districts with guides for curriculum development.

Subjects: English as a Second Language; Foreign Language; Health; History-Social Science; Mathematics; Physical Education; Reading-Language Arts; School to Career; Science; and Visual and Performing Arts

Grade Ranges: K; 1; 2; 3; 4; 5; 6; 7; 8; 9 and 10; and 11 and 12

Developmental Process: Major educational reform, initiated in 1983 with the passage of the Hughes-Hart Educational Reform Act (Senate Bill 813), containing more than eighty initiatives, led to reforms consisting of four phases (Alexander, 1994; Honig, 1994). First, a vision of teaching and learning was created. Second, systemic reform was undertaken by defining a core curriculum, aligning textbooks, tests and the curriculum, implementing a comprehensive accountability system, improving teacher professionalism through staff development and a mentor teacher program, increasing the leadership skills of principals, and enhancing the role of school district leadership in the reform process. Third, support networks were organised around strategies for improvement linking large numbers of schools. Fourth, discussions were conducted with schools about assisting this kind of change. The process of integrating standards-based education into the educational reform agenda began in October 1995 when working groups commenced developing Challenge School Standards by referring to the national standards, California curriculum frameworks, and school district frameworks. The drafts were distributed at a meeting in Sacramento in December 1995, so that school districts could determine how they related to local standards, and whether they matched student work. The California Assessment of Academic Achievement Act (Assembly Bill 265) of 1995 led to the formation of the 21-member Commission for Establishment of Academic Content and Performance Standards,

which was dissolved on completion of its work in December 1998. The Commission commenced overseeing the development of standards for the core subjects over two rounds in October 1996. Each round involved forming committees, which reviewed the Challenge School Standards and the Education Round Table Standards for High School Graduates, standards from other states, and international studies and standards. The Commission held public hearings, directed meetings for community input, and circulated drafts for comments to academics, educators, business people, and parents. The California State Board of Education adopted the California Content Standards for Reading-Language Arts and Mathematics in December 1997, and History-Social Science and Science in October 1998. Developed in a third round, California Content Standards for Visual and Performing Arts were adopted by the State Board in January 2001. At a further stage, the Curriculum Development and Supplemental Materials Commission (Curriculum Commission) appointed curriculum framework and criteria committees to develop new curriculum frameworks aligned to the California Content Standards. The committees developed drafts aligned to the standards, which were distributed to the educational community for field reviews across California. The Curriculum Commission revised the drafts on the basis of responses received at public hearings before presentation to the State Board for further public hearings. The State Board adopted new curriculum frameworks for Reading-Language Arts and Mathematics in December 1998, History-Social Science in October 2000, Foreign Language in May 2001, Science in February 2002, and Health in March 2002.

Implementation Process: The California Department of Education conducted teleconferences in May 1997 and May 1998 to inform personnel about the implementation of the California Content Standards, the assessment system and the accountability program. The University of California administers subject matter projects in foreign languages, history-social science, international studies, mathematics, physical education and health, reading and literature, science, writing, and the arts at regional sites to provide teachers with professional development and leadership. Professional development activities, networks, and resources to align local standards and curricula to the California Content Standards are provided to local school districts by 58 county offices of education. In June 1998, the Department of Education contracted WestEd and Management Analysis and Planning to evaluate standards-based accountability in local school districts. From 133 responding school districts to a questionnaire survey of a randomly stratified sample of 200 school districts, Guth et al. (1999) found that most school districts were in the early stages of developing local standards-based accountability systems. Almost all school districts had only recently completed lengthy processes of developing standards, the Stanford Achievement Test was a pervasive assessment measure, although its influence was viewed as problematical by many school districts, and accountability had positive effects on curriculum, instruction and assessment.

Revision Process: No process has been determined for revising the California Content Standards. Revision of the curriculum frameworks for the core subjects is undertaken on a rotation schedule over a six-year cycle, whilst revision of the curriculum frameworks for the other subjects is undertaken on a rotation schedule over an eight-year cycle.

Degree of State Control over Materials' Adoption: Subject-based instructional materials advisory panels (for subject matter content), content review panels (for the research base of the subject matter content), and the Legal Compliance Committee (for social content) advise the Curriculum Commission about the selection of a multiple number of approved materials. Selected in each subject at the elementary level (grades K to 8), materials are adopted for the state list by the State Board for a six-year adoption cycle for the core subjects, and an eight-year adoption cycle for the other subjects. The state-level selection process includes instructional materials advisory panels' and Legal Compliance Committee hearings with publishers, and public hearings by instructional materials advisory panels, the Legal Compliance Committee, the Curriculum Commission and the State Board following public reviews through displays at 24 learning resources display centres. California Learning Resource Network review teams conduct resource previews, legal compliance reviews, standards match reviews, minimum review requirements, additional features' reviews, profile and abstract reviews, and model technology integrated lesson and unit plan reviews.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. School districts may petition the State Board to adopt non-adopted materials.

Strategies Relating to Materials: The California Curriculum Frameworks contain criteria for evaluating materials. The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. The Department of Education maintains on its web site searchable databases of state-adopted materials, materials approved by the Legal Compliance Committee, and recommended literary materials in English, Spanish, Vietnamese, Hmong, Chinese and Filipino, selected by teachers, librarians and experts in children's literature. In August 1998, Governor Wilson approved two initiatives. The Schiff-Bustamante Standards-Based Instructional Materials Program (Assembly Bill 2041) provided one billion dollars over four years beginning in the 1998-1999 school year to fund the purchase of new materials aligned to the California Content Standards. Assembly Bill 2519 established a fixed adoption schedule for materials in the core subjects: History-Social Science in 1999; Science in 2000; Mathematics in 2001; and Reading-Language Arts in 2002. In August 2002, Assembly Bill 699 passed in 2001 required publishers to submit standards maps for grades 9 to 12 to school districts prior to the purchase of new materials in the core subjects. School districts are required to certify that the materials they adopt for grades 9 to 12 are aligned to the California Content Standards. The Instructional Materials Funding Alignment Program, established by Assembly Bill 1781 enacted in September 2002,

required standards-aligned materials from the state-adopted list to be used by each local education agency for the core subjects. In December 1999, the State Board contracted the Stanislaus County Office of Education at Modesto to design the California Learning Resource Network (CLRN) for reviewing and aligning supplemental electronic resources to the California Content Standards. The CLRN web site, launched in May 2001, contains a searchable database of information on electronic resources, a lesson plan builder, and a searchable database of primary source, secondary source, and reference web sites. Three-member review teams of teachers, certified through a training procedure, produce the evaluations of electronic resources. Trained library media specialists select the web sites. Founded in 1989, the Textbook League at Sausalito uses a network of reviewers with subject expertise to evaluate textbooks, posts reviews on its web site, and publishes reviews in a bimonthly bulletin, *The Textbook Letter*, which is distributed to subscribers.

Colorado

Title of State Standards: Colorado Model Content Standards

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, no; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, not available, I; 1998, 84%, B; 1999, 72%, C-; 2000, 85%, B; 2001, 86%, B; 2002, 89%, B+, revision: no; 2003, 86%, B, revision: no; 2004, 81%, B-, revision: no; FF - 1998, D+; 2000, D+

Components: The Colorado Model Content Standards provide model standards from which local standards are developed.

Subjects: Civics; Dance; Economics; Foreign Language; Geography; History; Mathematics; Music; Physical Education; Reading and Writing; Science; Theatre; and Visual Arts

Grade Ranges: K to 4; 5 to 8; and 9 to 12.

Developmental Process: In 1993, the Colorado General Assembly enacted House Bill 93-1313 requiring school districts to redesign curriculum, instruction, testing, and teacher development around standards. The nine-member Standards and Assessment Development and Implementation Council oversaw the development of standards over two rounds by task forces assigned to each subject. The first round, involving the development of standards for Mathematics, Science, Reading and Writing, Geography, and History, began in October 1993. The second round, involving the development of standards for Civics, Dance, Economics, Music, Physical Education, Theatre, Visual Arts, and Foreign Language, began in August 1994. The drafts were revised on the basis of responses from public hearings held across Colorado before presentation for adoption by the Colorado State Board of Education. Colorado Model Content Standards in the first round were adopted for Science in May 1995, Geography and Mathematics in June 1995, Reading and Writing in July 1995, and History in September 1995. Colorado Model Content Standards in the second round were adopted for Visual Arts and Music in November 1997, Physical Education and Foreign Language in December 1997, Economics

in August 1998, Civics in September 1998, and Dance and Theatre in January 2000. The Department of Education released suggested grade-level expectations for Mathematics, and Reading and Writing in February 2000, Science in March 2000, Dance, Music, Physical Education, Theatre, and Visual Arts in May 2000, and Civics, Geography, History and Foreign Language in June 2001.

Implementation Process: School districts were required to adopt standards that met or exceeded the Colorado Model Content Standards for subjects in the first round by January 1997, and for subjects in the second round by January 1999. School districts were directed to consult teachers, parents and community members in implementing standards, before shifting their focus to linking the standards to local curriculum, instruction and assessment practices. Initially, the Colorado Department of Education established a Standards Based Education Priority Project Team to coordinate the provision of technical assistance to school districts, but in 1999, formed regional service teams, each consisting of consultants responsible for academic standards based in eight regional assistance centres. The Department of Education designed the Standards and Assessment Resource Bank, initially released on a CD-ROM in March 1996. Made available on the Internet since January 1999 as Standards in Action, it provides links to resources available on web sites and units developed by Colorado teachers relating to curriculum, assessment and special needs.

Revision Process: No process has been determined for revising the Colorado Model Content Standards.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: Standards in Action contains teacher-developed curriculum units and materials.

Connecticut

Title of State Standards: Connecticut Framework

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1997, 91%, A-; 1998, 84%, B; 1999, 78%, C+; 2000, 85%, B; 2001, 81%, B-; 2002, 82%, B-, revision: no; 2003, 85%, B, revision: no; 2004, 82%, B-, revision: no; FF - 1998, C-; 2000, D+

Components: Connecticut's Common Core of Learning provides a curriculum rationale. The Connecticut Framework: K-12 Curricular Goals and Standards, which is organised by program goals, content standards and performance standards, provides guidelines for developing local curricula. The Guides to K to 12 Program Development, which present illustrations of classroom activities, prototype assessments, exemplars of student work, transactional conditions, suggestions for developers of local curricula, and issues and challenges, serve as guides for developing and improving local programs.

Subjects: Arts; Health and Safety Education; Language Arts; Learning Resources and Information Technology; Mathematics; Physical Education; Science; Social Studies; Technology Education; and World Languages

Grade Ranges: K to 4; 5 to 8; and 9 to 12

Developmental Process: In January 1987, the Connecticut State Board of Education adopted the Common Core of Learning, providing a statement of the standard for an educational citizen and the skills, knowledge and attitudes expected of school graduates. Revised in 1997 and approved by the State Board in March 1998, the Common Core of Learning provides a statement on foundational skills and competencies, understandings and applications of discipline-based and interdisciplinary skills, and aspects of character. Appointed to each subject, content advisory committees, composed of educators, parents and community members, reviewed the national standards, curriculum frameworks from other states, and local curriculum documents to develop drafts for the Connecticut Framework. The initial drafts, which were distributed to participants at a state conference in 1996, were revised and disseminated to the educational community for reviews on two occasions in the spring and autumn of 1997 before being presented to the State Board. The State Board adopted revised drafts for the Arts, Language Arts, Learning Resources and Information Technology, Mathematics, Physical Education, Science, Technology Education and World Languages in February 1998, whilst revised drafts for Health and Safety Education, and Social Studies were adopted in June 1998. Curriculum committees developed guides to K to 12 program development, intended to assist school districts develop local curriculum guides. Following statewide reviews by educators, guides to K to 12 program development were published for Mathematics and World Languages in 1999, and Physical Education in 2000.

Implementation Process: The Connecticut Framework was disseminated to school districts in August 1998 for implementation during the 1998-1999 school year. The Connecticut Department of Education recommended that school districts should use a process consisting of four phases to develop local curriculum guides. First, planning should involve convening a curriculum development committee, identifying key issues and trends in a specific content area, and assessing needs and issues. Second, the curriculum development committee should articulate a K to 12 program philosophy, define the K to 12 program, grade-level and course objectives, identify resource materials to assist with program implementation, and develop or identify assessment items and instruments to measure student progress. Third, the curriculum development committee should oversee implementation of the new program over an extended period. Fourth, the curriculum development committee should update the program regularly, and evaluate it before the next curriculum cycle is initiated.

Revision Process: Committees of education leaders revised the Language Arts and Science frameworks, which were implemented in the autumn of 2004.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: During the third phase of developing local curriculum guides, the curriculum development committee should identify and link available resources to curriculum objectives in the local curriculum guide. Founded in 1983, Connie Muther & Associates at Manchester offers a consultancy service for school districts by providing a modular training program for selecting and implementing materials aligned to the particular curriculum used in a school district.

Delaware

Title of State Standards: Delaware Curriculum Frameworks

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, no; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1997, 97%, A; 1998, 84%, B; 1999, 85%, B; 2000, 86%, B; 2001, 85%, B; 2002, 89%, B+, revision: no; 2003, 90%, A-, revision: no; 2004, 87%, B+, revision: no; FF - 1998, D+; 2000, C+

Components: The Delaware Curriculum Frameworks, which present content standards, performance indicators or sample activities, provide guidelines for curriculum development by school districts. The Teacher's Desk Reference, which presents content standards, end-of-cluster expectations and performance indicators, provides teachers with models for curriculum planning and unit development.

Subjects: Agriscience; Business, Finance and Marketing Education; English Language Arts; Foreign Languages; Health Education; Mathematics; Physical Education; Science; Social Studies; Technology; and Visual and Performing Arts.

Grade Ranges: Grade ranges in the Delaware Curriculum Frameworks vary from subject to subject. Grade ranges in the Teacher's Desk Reference are K, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12.

Developmental Process: Following the release in 1990 of a report recommending educational reform, the Delaware Department of Education initiated discussions in 1991 with educators, parents, business people and community members about developing standards. In the summer of 1992, curriculum framework commissions were appointed in the core subjects for a first round. In 1993, Delaware initiated New Directions, a process of systemic reform, which led to the adoption of the New Directions Vision Statement in January 1995, providing the basis for developing standards. From the autumn of 1994, curriculum framework commissions were appointed for Visual and Performing Arts, and Foreign Languages in a second round, Agriscience, and Business, Finance and Marketing Education in a third round, and Health Education and Physical Education in a fourth round. The curriculum framework commissions consulted stakeholders in their disciplines, and reviewed national and state standards to develop a series of drafts, which were

reviewed by subject experts and teachers. The Delaware State Board of Education adopted Delaware Curriculum Frameworks for the core subjects in June 1995, Agriscience in July 1997, Foreign Languages in August 1997, Visual and Performing Arts in November 1997, Business, Finance and Marketing Education in January 1998, and Health Education and Physical Education in 2000. Subject-based executive committees of teachers from across Delaware developed performance indicators for each grade level in the Teacher's Desk Reference from the Delaware Curriculum Frameworks. The performance indicators were reviewed, revised and edited by district curriculum directors and senior teachers, higher education faculty, and Department of Education assessment specialists.

Implementation Process: In August 1994, Governor Thomas Carper appointed the Education Improvement Commission to investigate ways in which Delaware's educational system could be redesigned to facilitate implementation of standards-based reform. In 1995, the Education Improvement Commission recommended decentralising the educational system to promote active involvement, continuous improvement, evaluation of school performance, and effective use of resources. Published in 1998, the teacher's desk reference was disseminated to teachers, who used the performance indicators as models for developing their own units of work.

Revision Process: No process has been determined for revising the Delaware Curriculum Frameworks.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The Agriscience framework contains lists of resources available for the elementary and middle school levels. The Foreign Languages framework presents guidelines for selecting materials.

Department of Defense Education Activity

Note: Founded in 1994, the Department of Defense Education Activity (DoDEA) provides education to the dependent children of United States Department of Defense military and civilian personnel located on military bases. Operated in continental United States by the Department of Defense Domestic Elementary and Secondary Schools, they are organised into 16 districts in Alabama, Georgia, Kentucky, New York, North Carolina, South Carolina, Virginia, Guam and Puerto Rico. Organised into 12 districts, they are operated by the Department of Defense Dependents Schools in 13 foreign countries: Bahrain; Belgium; Cuba; Germany; Iceland; Italy; Japan; Republic of Korea; Netherlands; Portugal; Spain; Turkey; and the United Kingdom.

Title of Standards: DoDEA Curriculum Standards

Standards Grades: AFT, EPE and FF have not reviewed the DoDEA Curriculum Standards.

Components: The DoDEA Curriculum Standards present content and performance standards.

Subjects: English Language Arts; Foreign Language; Health Education; Host Nation; Mathematics; Music; Physical Education; Professional Technical Studies; Science; Social Studies; and Visual Arts

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1994, the Department of Defense Education Activity formed a Leadership Team, consisting of officials, military representatives, administrators, teachers and parents, to formulate a community strategic plan for 1995 to 2000. In November 1994, the Leadership Team adopted the National Education Goals as a basis for the plan, and developed a mission statement, a vision, benchmarks, and a set of guiding principles. The plan was then presented for review at meetings with superintendents, interviews with 120 leaders, focus meetings, and questionnaire surveys administered in the districts. Following refinement in March 1995, the first community strategic plan was released in October 1995. In January 1999, the Department of Defense Education Activity initiated a second five-year community strategic plan for 2001 to 2006 by forming a broadly representative Leadership Team. The Washington-based firm, the McKenzie Group, contracted to evaluate the effectiveness of the first plan, interviewed personnel, conducted district focus groups, and surveyed stakeholder groups to produce recommendations referring to the ten goals. Using the findings of the evaluation, the Leadership Team revised and disseminated a new draft community strategic plan for review in August 2000. Following revision, the second community strategic plan, consisting of a vision, mission, a set of eight guiding principles, four goals, and nine outcomes, was released in March 2001. Beginning in 1998, the Department of Defense Education Activity contracted the National Center on Education and the Economy (NCEE) to develop DoDEA Curriculum Standards over two rounds. The first round, involving the development of standards in the core subjects led NCEE to review the national standards to adapt and produce DoDEA Curriculum Standards, which were released in September 1998. The second round, involving the development of standards for the remaining subjects led the Department of Defense Education Activity's Education Division to convene teams of teachers in the particular subjects to review relevant national standards in order to adapt and produce DoDEA Curriculum Standards, which were released in 2000.

Implementation Process: Professional development in the use of the DoDEA Curriculum Standards in the four core subjects was provided to teachers in the 1999-2000 school year. Implementation of Goal 1, Highest Student Achievement, in the second community strategic plan was phased in over four stages. By August 2001, the Department of Defense Education Activity defined a systematic process for periodically reviewing and revising standards, purchasing materials, identifying courseware and technology infrastructure requirements, aligning assessments, developing curriculum tools, disseminating best

practices, and assessing the quality of standards implementation. Each school used an improvement process to reach the four goals of helping students achieve the performance standards, and identified or developed local assessments. By October 2002, each school aligned professional development plans to the community strategic plan for achieving the performance standards. By October 2003, performance standards were used at each grade level, indicators of high quality programs were used to monitor subjects, external criterion-referenced assessments were aligned to performance standards, assessments in social studies and science were administered, and an accountability system reported on achievement towards the performance standards. By October 2004, the Department of Defense Education Activity used consistent policies to support a standards-based system for grading, credit, promotion and graduation. In 2004, the Department of Defense Education Activity released a quality indicator map intended to serve as a tool for program development and improvement in standards-based curriculum implementation, as well as for self-assessment by educators.

Revision Process: The second community strategic plan established a process for reviewing and revising the DoDEA Curriculum Standards periodically beginning in August 2001. Revision of the subjects, which is undertaken alternately over a six-year cycle, is conducted by the Curriculum Development Oversight Committee, consisting of each assistant district superintendent and curriculum specialists from Department of Defense Education Activity headquarters at Arlington, Virginia. The curriculum review cycle consists of six year long steps. In the first year, the tasks for all steps of the cycle are identified according to the results of a needs assessment, and the program is evaluated. In the second year, work groups are convened in the districts and headquarters to revise the curriculum, develop content and performance standards, and materials are reviewed and correlated to the standards. In the third year, evaluations of the materials' review are conducted, integrated assessments are written, cost analysis of the highest ranked materials compiled, and districts order materials. In the fourth year, teachers are trained in the content and performance standards, teaching approaches, and the assessments by using the newly adopted materials as tools to implement the standards. In the fifth year, the standards and adopted materials are implemented. In the sixth year, the degree and quality of the implementation and the use of adopted materials to meet the standards are assessed, and adjustments made accordingly.

Degree of Centralised Control over Materials' Adoption: Subject-based reviewers, representing headquarters and each district, advise the education program supervisor about the selection of a multiple number of approved materials in each subject for the DoDEA list adopted by the Curriculum Development Oversight Team for a six-year adoption cycle.

Degree of Local Control over Materials' Adoption: Districts select materials from the DoDEA adoption list.

Strategies Relating to Materials: The rotation schedules of the curriculum review and materials adoption cycles are sequenced. The second five-year community strategic plan established a process for aligning materials to the DoDEA Curriculum Standards.

District of Columbia

Title of Standards: Standards for Teaching and Learning

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1996, not available; 1998, not available; 1999, not available; 2000, not available; 2001, not available; 2002, 63%, D, revision: no; 2003, 69%, D+, revision: no; 2004, 61%, D-, revision: no; FF - 1998, C-; 2000, B-

Components: The Standards for Teaching and Learning organise performance standards, essential skills and technology integration by content standards.

Subjects: Health Physical Education; Mathematics; Music; Reading Language Arts; Science; Social Studies; and Visual Arts

Grade Ranges: pre-K; K; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; and 12

Developmental Process: Beginning in 1994, the District of Columbia Public Schools initiated a series of projects in which teams of teachers, administrators, parents and business representatives reviewed the national standards, and performance standards developed by the New Standards Project. Then, the teams developed Standards for Teaching and Learning for the core subjects. Early in 1997, the District of Columbia passed the DC School Reform Act, which gave further impetus to this work as part of a strategy for systemic reform.

Implementation Process: In December 1997, the District of Columbia Public Schools contracted NCEE to provide training about performance standards for principals and teachers, streamline the provision of resources to schools, and devise a public campaign to win parent and community support for stronger academic standards. During the first year of implementation, teachers focused on the Standards for Teaching and Learning in Reading Language Arts and Mathematics. Professional development offered to approximately 250 teachers, drawn from all schools, applied a train-the-trainers process. These teachers assisted other teachers in their schools to translate the Standards for Teaching and Learning into classroom practice. Institutes were held to train teachers in teaching reading and mathematics, and specific reading and mathematics programs intended to raise low student performance were implemented in 50 targeted assistance schools.

Revision Process: No process has been determined for revising the Standards for Teaching and Learning.

Degree of State Control over Materials' Adoption: not applicable

Degree of Local Control over Materials' Adoption: The Committee on Operation and Vision selects materials, which are adopted by the District of Columbia Board of Education.

Strategies Relating to Materials: No strategies were identified.

Florida

Title of State Standards: Sunshine State Standards

Standards Grades: AFT - 1995, no; 1996, yes; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 86%, B; 1998, 90%, A-; 1999, 92%, A-; 2000, 91%, A-; 2001, 84%, B; 2002, 90%, A-, revision: no; 2003, 94%, A, revision: no; 2004, 94%, A, revision: no; FF - 1998, D+; 2000, C-

Components: The Sunshine State Standards organise content standards, benchmarks and grade level expectations by strands. The Florida Curriculum Frameworks provide local school districts with guides for curriculum development.

Subjects: Arts; Foreign Languages; Health Education and Physical Education; Language Arts; Mathematics; Science; and Social Studies

Grade Ranges: pre-K to 2; 3 to 5; 6 to 8; and 9 to 12

Developmental Process: In 1991, the Florida Legislature passed Blueprint 2000, which called for the formation of the Florida Commission on Education Reform and Accountability. The Commission developed Florida's System of School Improvement and Accountability, based on eight goals, of which Goal 3 addressed student performance. In response, the Florida Department of Education initiated a standards-based reform effort. A process for developing standards began in 1994, when teachers, administrators, business leaders, representatives of professional associations and nationally-known education specialists conducted research on content standards, and then reached a consensus about their form. Completed in the spring of 1996, the Sunshine State Standards were adopted by the Florida State Board of Education in May 1996. In 1992, a federal grant enabled the Department of Education to develop a Science curriculum framework, a professional development guide, and an electronic curriculum-planning tool. Formed in January 1994, an Advisory Committee oversaw writing committees develop new curriculum frameworks in the other subjects, and revise the Science curriculum framework. Over a two-year period, the writing committees conducted extensive research on standards, received input from subject associations, and wrote and revised successive drafts, whilst the Advisory Committee, representatives from professional associations, and an informal external review committee reviewed the drafts on several occasions. In 1995, the Florida State University and McREL Institute analysed the drafts to determine the extent to which they addressed the principles of Florida's System of School Improvement and Accountability, other major state initiatives, and the national standards. Following revision, writing teams, focus groups of stakeholders, conference participants, school districts and parent organisations reviewed the drafts. After final revision, the Florida Curriculum Frameworks were published in 1996.

Implementation Process: In May 1996, the Department of Education held a teleconference to increase awareness of the Sunshine State Standards. A cadre of trainers was trained in the summer of 1996 to assist school districts implement the Sunshine State Standards. School districts began aligning local curricula with the Sunshine State Standards, developing learning and assessment activities, and pilot testing them during the 1996-1997 school year. After a statewide field test, revised versions of the Sunshine State Standards and the Florida Curriculum Frameworks were disseminated for full implementation in the 1997-1998 school year. The Department of Education contracted Florida State University to modify the prototype software developed for the electronic curriculum-planning tool for application to all subjects. In 1997, the Electronic Curriculum Planning Tools was designed to facilitate teachers' planning of learning activities that reflect the goals and standards specified in the Sunshine State Standards and the Florida Curriculum Frameworks. Six area centres for educational enhancement, established in 1996 to assist schools implement the Sunshine State Standards and Florida Curriculum Frameworks, provide training in the use of the Electronic Curriculum Planning Tools and its successor.

Revision Process: No process has been determined for revising the Sunshine State Standards and the Florida Curriculum Frameworks. Contracted to determine needed changes to the Electronic Curriculum Planning Tools, the Florida State University produced and released a revised version, renamed the Curriculum Planning Tool, in March 1999. The Curriculum Planning Tool consists of two databases. The Integrated Curriculum Planning Tool for Elementary Education contains the Sunshine State Standards for grades pre-K to 5 in all subjects and associated learning activities. The Integrated Curriculum Planning Tool for Secondary Education contains the Sunshine State Standards for grades 6 to 12 in all subjects, associated learning activities, and the full text of state-adopted courses, which have been aligned with the Sunshine State Standards. The Curriculum Planning Tool consists of four interactive files. The Learning Activities Database contains all of the learning activities. The Benchmarks database contains the Sunshine State Standards and benchmarks. The Planner database contains information used to organise and manage activities for a designated period of time, course or topic. The Course Descriptions Database in the Curriculum Planning Tool for Secondary Education contains course descriptions for courses in grades 6 to 12 aligned to the Sunshine State Standards. To support the Curriculum Planning Tool, the Department of Education provided from September 1999 a database of learning activities developed by Florida teachers, which had been validated by expert review and pilot-tested in classrooms.

Degree of State Control over Materials' Adoption: Subject-based state instructional materials committees select a multiple number of approved materials in each subject for the state list adopted by the commissioner for a six-year cycle. The state-level selection process includes a modular training program for members of state instructional materials

committees and state instructional materials committees' hearings with publishers and the public.

Degree of Local Control over Materials' Adoption: Local school districts select materials from the state adoption list.

Strategies Relating to Materials: The Florida Curriculum Frameworks provide guidelines about using materials of different media, and for selecting materials. The Department of Education requires publishers to meet prescriptive specifications intended to align materials submitted for state-level adoption with the Sunshine State Standards and the Florida Curriculum Frameworks. In 1999, a group appointed by the commissioner to study the adoption procedure made recommendations that led to changes to the Florida statutes in May 2000. The most significant changes were the elimination of district instructional materials committees, and the requirement for districts to purchase at least one basic material for each core subject from the state-adopted list. School districts are required to report new purchases of state-adopted materials on the Florida Instructional Materials Reporting web site launched by the Department of Education in 2001. Reporting new purchases ensures that school districts acquire adequate and current materials, adhere to the state adoption schedule, and provide planning information for new acquisitions to publishing companies. The Florida School Book Depository offers a catalogue and searchable database of state-adopted materials, and provides an on-line ordering system for Florida schools on its web site.

Georgia

Title of State Standards: Quality Core Curriculum

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 94%, A; 1998, 93%, A; 1999, 89%, B+; 2000, 89%, B+; 2001, 78%, C+; 2002, 80%, B-, revision: yes; 2003, 80%, B-, revision: yes; 2004, 89%, B+, revision: yes; FF - 1998, C-; 2000, C-

Components: The Quality Core Curriculum organises content standards by strands and topics. The Georgia Performance Standards organise performance standards by strands.

Subjects: Agriculture Education; English to Speakers of Other Languages; Fine Arts; Foreign Languages; Health and Physical Education; Language Arts; Mathematics; Science; Social Studies; Technology and Career Education

Grade Ranges: K; 1; 2; 3; 4; 5; 6; 7; 8; and 9 to 12

Developmental Process: In 1983, Governor Joe Frank Harris appointed the Education Review Committee, which reviewed Georgia's educational system producing a set of recommendations. The passage of these recommendations through the Georgia General Assembly in April 1985 in the form of the Quality Basic Education Act led to the development of a uniform Quality Core Curriculum. Adopted by the Georgia State Board of Education in June 1988, the Quality Core Curriculum was implemented over the

subsequent period ending in 1995. As the Quality Basic Education Act requires the Georgia Department of Education to periodically revise and update the Quality Core Curriculum, Governor Zell Miller gave this task to the Georgia School Improvement Panel in 1995. From surveying 8,000 teachers on their attitudes concerning the Quality Core Curriculum, the Panel found that 93 percent expressed a desire for revision. The Panel selected 150 educators, parents, business representatives, community members and higher education personnel to serve on subject-based review teams, which reviewed the national standards and standards' documents from other states to revise the Quality Core Curriculum at two writing sessions held in the summer and autumn of 1996. In January 1997, a preliminary draft was distributed to school districts on a CD-ROM for review. Revised in July 1997 on the basis of a report compiled from almost 15,000 responses, the draft was approved by the State Board in November 1997. In July 1998, the Panel appointed 130 teachers, subject specialists, business and community leaders, and higher education personnel to develop and refine content standards not already addressed by the review teams. These revisions were approved by the State Board in November 1998, and merged into the Quality Core Curriculum.

Implementation Process: The first revised Quality Core Curriculum was disseminated in January 1998 for implementation during the 1998-1999 school year. In January 1998, the Department of Education published an implementation guide, *Raising Expectations*, consisting of a module of presentation notes, support materials, reference materials, staff development activities, a video and a set of overhead transparencies. The Georgia Leadership Academy convened three workshops at Macon in February and March of 1998, one each for key educators at the elementary, middle and high school levels on appropriate teaching strategies. Two national experts conducted a four-day workshop on curriculum alignment held at Macon in March 1998 for more than 300 curriculum leaders. A series of interactive conferences were held at 24 sites across Georgia in February, March and April of 1998 for teachers to exchange ideas. Staff development activities were conducted in 16 regional education service agencies during the summer and autumn of 1998 to help teachers implement the Quality Core Curriculum in their classrooms. The Department of Education contracted the Georgia Institute of Technology to develop a web site, Georgia Learning Connections, and engaged groups of teachers, who identified, evaluated and built a collection of resources. First made available on the Internet in October 1999, Georgia Learning Connections links web sites containing lesson plans, and provides a searchable database of peer-reviewed lesson plans linked to the Quality Core Curriculum. Dissemination of the second revised Quality Core Curriculum in the summer of 2004 involved professional development, mapping of textbooks, and the development of parent guides.

Revision Process: Undertaken on a rotation schedule over a six-year cycle, revision of the subjects in the Quality Core Curriculum is conducted by subject-based committees.

Between the summers of 1998 and 2000, groups of teachers revised the Mathematics standards in the Quality Core Curriculum. In June 2002, the State Board appointed the Curriculum Revision Leadership Team to oversee revision of the Quality Core Curriculum over two phases. Approximately 90 curriculum experts undertook the first phase in the autumn of 2002. They developed content standards for kindergarten and grades 3, 5, 8, 12 and 14, analysed data regarding the strengths and weaknesses of the Quality Core Curriculum, and developed a blueprint for revising specific content standards in the core subjects. Curriculum expert advisory boards consisting of nationally recognised experts, teacher teams organised by elementary, middle and high school levels, and a Business and Community Advisory Board undertook the second phase in the summer of 2003. The curriculum expert advisory boards selected state, national and international standards used as models by the teacher teams for reviewing the content standards in the Quality Core Curriculum. The teacher teams developed a draft document for the core subjects containing performance standards. Following review by the State Board in November 2003, the draft was presented for public review from January to March of 2004. After revision by the teacher teams in April 2004, the State Board approved the Georgia Performance Standards for the core subjects in June 2004. Following the definition of performance standards in the other subjects, the Georgia Performance Standards will become Georgia's new curriculum.

Degree of State Control over Materials' Adoption: Regional textbook advisory committees advise the State Textbook Advisory Committee about the selection of a multiple number of recommended materials in each subject for the state list adopted by the State Board for a six-year adoption cycle. The state-level adoption process includes State Textbook Advisory Committee hearings with publishers, and public reviews through displays at 12 examination sites.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state list of recommended materials, which are adopted by local school boards. School districts may adopt non-adopted materials.

Strategies Relating to Materials: The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. From the spring of 1998, publishers were required to align materials submitted for state-level adoption to the revised Quality Core Curriculum. The implementation guide lists suggestions made by the review teams for materials that would be helpful in addressing content standards in Fine Arts, Foreign Languages, Language Arts, Science, and Social Studies. The Department of Education maintains on its web site a searchable database of state-adopted materials. The Georgia Learning Connections contains teacher-developed lesson plans.

Hawaii

Title of State Standards: Hawaii Content and Performance Standards

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 85%, B; 1998, 76%, C; 1999, 60%, D-; 2000, 67%, D+; 2001, 60%, D-; 2002, 62%, D-, revision: yes; 2003, 69%, D+, revision: yes; 2004, 77%, C+, revision: yes; FF - 1998, D+; 2000, D-

Components: The Hawaii Content and Performance Standards organise content standards and benchmarks by strands. The Curriculum Frameworks provide guidance for curriculum development, instruction and assessment at the local level.

Subjects: Career and Life Skills; Educational Technology; Fine Arts; Health; Language Arts; Mathematics; Physical Education; Science; Social Studies; and World Languages

Grade Ranges: K to 3; 4 to 5; 6 to 8; and 9 to 12

Developmental Process: In 1991, the Hawaii Legislature appointed the 11-member Hawaii Commission on Performance Standards to set performance standards, recommend the means to assess student attainment of the standards, and develop an implementation model. The Commission reviewed national and state standards' documents over an eight-month period in 1992 to establish the direction for its task. Following a meeting at which approximately 100 subject specialists assisted in establishing a preliminary set of standards, the Commission conducted ten public forums on the six main islands of Oahu, Hawaii, Maui, Kauai, Molokai and Lanai to solicit input for revising the preliminary standards. Then subject specialists revised the preliminary set to form the Hawaii Content and Performance Standards, which were adopted by the Hawaii State Board of Education in June 1994, and published in a blue-covered document commonly known as the Blue Book.

Implementation Process: In October 1995, the State Board adopted a policy calling for statewide implementation of the Hawaii Content and Performance Standards. In June 1996, schools were directed to implement the Hawaii Content and Performance Standards and submit assessments of the reviews. In September 1996, the Hawaii Department of Education presented a report on a survey of schools to the State Board, indicating the limited extent to which local curricula had been aligned to the Hawaii Content and Performance Standards. However, efforts by the State Board and the Department of Education to secure funds from the Hawaii Legislature in 1996, 1997 and 1998 for staff development to support implementation of the Hawaii Content and Performance Standards were unsuccessful. In 1999, the State Board adopted the Strategic Plan for Standards-Based Reform developed over the summer and autumn of 1999 by more than 1,200 educators. The Strategic Plan provided curriculum support, designed an assessment and accountability system, developed a comprehensive student support system, modernised administrative support services, and redefined school governance. In August 2000, the Department of Education released the Standards Implementation Design System providing a process for schools to implement standards-based reform consisting of seven phases. First, a school profile is developed. Second, a vision and purpose, and a set of beliefs are defined. Third, school-wide learner outcomes are clarified. Fourth, instructional and

organisational effectiveness are analysed. Fifth, growth areas are ranked, and a standards implementation action plan is developed. Sixth, the standards implementation action plan is implemented, and an ongoing follow-up process is established to monitor implementation and accomplishment of the school-wide standards. Seventh, the results are evaluated, and planning for continuous improvement is undertaken.

Revision Process: In 1994, the Hawaii Legislature enacted legislation requiring the State Board to appoint a commission in 1997, and every four years thereafter, to evaluate the implementation and effectiveness of the Hawaii Content and Performance Standards. In order to determine their quality, the 11-member Performance Standards Review Commission convened nine school-community forums on Oahu, Hawaii, Maui and Kauai in March 1998, panel presentations, individual and group meetings, school visits, and established a web site to gather input. The Commission also reviewed the report of a study conducted by the University of Hawaii at Manoa into each school's reviews and application of the Hawaii Content and Performance Standards, and more than 50 documents on standards-based education. In January 1999, the Commission recommended that an overarching vision should be articulated, short- and long-term plans for transforming teaching and learning should be designed, and a statewide assessment and accountability system should be developed. As important concepts in major disciplines should be identified, the Hawaii Content and Performance Standards should meet a consistent set of criteria, and an ongoing process for reviewing them should be established. Ten writing teams were appointed to review the content standards across ten subjects: Physical Education; Educational Technology; and the existing eight areas in the Blue Book. The drafts were presented to national experts and local stakeholders for review. Following revision of the drafts, the revised Hawaii Content and Performance Standards were published in August 1999. Convened at the same time, teams of teachers completed the development of performance standards in February 2003. Writing teams and review teams were appointed in each subject area to develop curriculum frameworks and instructional guides over two rounds. Released in May 2003, the curriculum frameworks and instructional guides in the first round for the core subjects were distributed to teachers on a CD-ROM. Subsequently, the curriculum frameworks and instructional guides were incorporated into the Standards Toolkit released on the Department of Education's web site in August 2003.

Degree of State Control over Materials' Adoption: Subject committees select materials for the state list of a multiple number of materials in each subject approved by subject supervisors.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. Schools may petition the district or state subject supervisor to adopt non-adopted materials.

Strategies Relating to Materials: In 2003, the Department of Education established a web site, Instructional Materials Review, providing a searchable database of materials aligned to the revised Hawaii Content and Performance Standards. Commencing in 2004, the Department of Education published lists of recommended textbooks aligned to the revised Hawaii Content and Performance Standards.

Idaho

Title of State Standards: Idaho Achievement Standards

Standards Grades: AFT - 1995, no; 1996, yes; 1997, yes; 1998, no; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1997, 70%, C-; 1998, 72%, C-; 1999, 57%, F; 2000, 74%, C; 2001, 67%, D+; 2002, 65%, D, revision: no; 2003, 69%, D+, revision: no; 2004, 77%, C+, revision: no; FF - 1998, D-; 2000, not available

Components: The Idaho Achievement Standards organise content standards, and content knowledge and skills by strands.

Subjects: Health; Humanities; Language Arts Communications; Mathematics; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1991, the Idaho State Board of Education formed the Idaho School Reform Committee and the Goals and Testing Commission to compile proposals for school reform developed in 1990 by three committees. A consolidated report released in 1992 presented an action plan for moving Idaho towards a performance-based educational system. Charged with this task, the Goals and Testing Commission approved a vision for Idaho schools, defined a set of state curricular goals for each subject, and developed exit performance standards for grade 4, grade 8 and high school graduation. Teams of teachers, parents, local school board members, community representatives, patrons and subject specialists consulted state-adopted textbooks and skills measured by test batteries and direct assessments to develop skills-based scope and sequence guides, which were published in 1997. At the same time, the State Board initiated the development of academic standards over three rounds. Appointed in September 1997, the ten-member Exiting Standards Commission oversaw the work of five subcommittees, which developed exiting standards for grades 9 to 12 in the subjects of Health, Language Arts Communications, Mathematics, Science and Social Studies in the first round. Appointed in 1999, the seven-member Achievement Standards Commission oversaw the work of five subcommittees, which developed achievement standards for kindergarten to grade 8 in the same five subjects in the second round. Appointed in April 2000, the Humanities Steering Committee oversaw the work of four subcommittees, which developed achievement standards for Humanities (Interdisciplinary Humanities, Visual and Performing Arts, World History and Foreign Language) in the third round. The subcommittees examined national standards, state guides and other states' standards in developing initial drafts. Following reviews at

meetings held across Idaho, the drafts were revised on the basis of responses. After revision by the respective overseeing body, second drafts were reviewed at public hearings held across Idaho before further revisions were made. The third drafts were reviewed by McREL Institute, which recommended specific changes. Following revisions based on McREL Institute's reviews, the State Board approved the Idaho Achievement Standards for the first round in April 1999, the second round in March 2001, and the third round in November 2001.

Implementation Process: Each school district was required to develop a curriculum aligned to the Idaho Achievement Standards and an implementation plan during the 2001-2002 school year. In August 2000, the Idaho Department of Education released the Standards Implementation System, providing a process consisting of six phases for schools to develop curricula aligned to the Idaho Achievement Standards. First, governance and leadership teams were formed. Second, the teams created a vision by determining alignment between the local curriculum and the Idaho Achievement Standards. Third, data on district performance were collected and analysed. Fourth, an educational program aligned to the Idaho Achievement Standards was developed and implemented. Fifth, a system for monitoring program implementation was designed. Sixth, the program was evaluated to determine the extent to which measurable goals for student performance have been met.

Revision Process: No process has been determined for revising the Idaho Achievement Standards.

Degree of State Control over Materials' Adoption: Reviewers advise the Curricular Materials Selection Committee about the selection of a multiple number of approved materials in each subject for the state list adopted by the State Board for a five-year adoption cycle. The state-level adoption process includes Curricular Materials Selection Committee hearings with publishers and the public following public reviews through displays at eight curricular materials regional centres, and publishers' caravans.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. School districts may petition the Curricular Materials Selection Committee to adopt non-adopted materials.

Strategies Relating to Materials: Since 1999, the Curricular Materials Selection Committee categorises submitted materials against the Idaho Achievement Standards as comprehensive, supportive or limited. The Idaho Textbook Depository offers a searchable database of state-adopted materials, and provides an on-line ordering system for Idaho schools on its web site.

Illinois

Title of State Standards: Illinois Learning Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, yes; 1998, no; 1999, no; 2001, standards: yes, curriculum: yes (English, Mathematics, Science, Social Studies); EPE - 1997, 83%, B; 1998, 82%, B-; 1999, 83%, B; 2000, 78%, C+; 2001, 80%, B-; 2002, 91%, A-, revision: no; 2003, 82%, B-, revision: no; 2004, 91%, A-, revision: yes; FF - 1998, C-; 2000, C-

Components: The Illinois Learning Standards, which organise content standards and benchmarks by goals, provide model standards from which local standards are developed.

Subjects: English Language Arts; Fine Arts; Foreign Languages; Mathematics; Physical Development and Health; Science; and Social Science

Grade Ranges: early elementary school; late elementary school; middle and junior high school; early high school; and late high school

Developmental Process: In 1985, the Illinois State Board of Education defined 34 State Goals for Learning in Biological and Physical Sciences, Fine Arts, Language Arts, Mathematics, Physical Development and Health, and Social Sciences. School districts were required to establish student-learning objectives in these subjects that met or exceeded the State Goals for Learning, and to assess students in meeting local objectives in grades 3, 6, 8 and 11. The development of the Illinois Learning Standards began in 1995 with the formation of seven writing teams, which examined the national standards, other states' standards, and the State Goals for Learning to develop drafts in each subject. A Coordinating Team, composed of representatives from a cross-section of constituencies, guided the production of the drafts, which were released for public review in July 1996. Following completion of the public review in January 1997, the University of Illinois at Springfield created a database of survey information and data analyses of the responses. Seven refinement teams, consisting of educators, business people, parents, work experience and technology specialists, used this information to revise the drafts in February 1997. At the same time, an External Advisory Team analysed issues arising from the public review and produced a report for the State Board relating to the implementation of the Illinois Learning Standards, which were adopted by the State Board in July 1997. Teams of educators, who expanded the five grade levels to ten stages of educational development, prepared performance descriptors to assist teachers align local curricula to the Illinois Learning Standards. Released by the State Board in September 2000 for field-testing by a sample of teachers during 2000-2001, the final product of descriptors, performance assessments and student work was published in the summer of 2001.

Implementation Process: School districts were required by law to adopt and implement standards that met or exceeded the Illinois Learning Standards. The State Board provided a local and state comparison tool on its web site for linking the Illinois Learning Standards to local standards. Schools accessed a set of forms, one for each subject, which were used to reference local goals, outcomes or objectives, and rated their congruence to the Illinois Learning Standards using a three-point scale. The State Board, the North Central Regional Educational Laboratory and the Illinois Business Roundtable designed the Illinois School

Improvement Web Site, presenting a searchable database of the Illinois Learning Standards, data on individual schools' achievements, the integrated school improvement planning framework, sample learning activities, and sample student work. Developed in 1998, the integrated school improvement planning framework was used to create a shared vision for the school, collect and analyse data and determine gaps, develop an integrated action plan, and reflect, evaluate and refine the process and plan. Staff development for implementing the Illinois Learning Standards is provided by 45 regional offices of education, and three intermediate service centres. Commenced as a one-year trial in 2000, the Standards Aligned Classroom Initiative offered an initial workshop to participating teachers presenting a specific approach to introducing the Illinois Learning Standards to students. The teachers then participated in local learning teams, which met regularly to discuss challenges and share experiences related to implementing standards. In addition, a coach assigned to each team supported and directed the efforts of the team. Involving a pre- and post-test design followed by reviews of participants' portfolios with varying scores, and interviews with a sample of participants, an evaluation of the trial indicated that teachers became more positive towards standards-based education during its course (Wolfe, 2001). Following adoption of a policy on family and community responsibility in enhancing student achievement, the State Board conducted a series of regional schoolhouse meetings across Illinois in 2000 and 2001 to collect input from local communities. In 2001, a web site was established to promote community involvement in implementing the Illinois Learning Standards by developing model programs in schools, distributing lists of materials, and seeking the participation of additional organisations.

Revision Process: An annual report presented to the State Board on the implementation process, and formal reviews conducted at three-year intervals, are used to inform an orderly process for revising the Illinois Learning Standards. In January 1999, the State Board commissioned the University of Illinois at Urbana-Champaign to conduct a four-year evaluation of the implementation of the Illinois Learning Standards. By surveying samples of teachers, administrators and superintendents and conducting case studies in selected schools, annual evaluations reported an increase in implementation activities (DeStefano and Prestine, 1999; DeStefano and Prestine, 2000; DeStefano and Prestine, 2001; DeStefano and Prestine, 2002).

Degree of State Control over Materials Adoption: none

Degree of Local Control over Materials Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The State Board recommends that once a school district has established a standards-based system, textbook adoption and rotation procedures should be guided by the Illinois Learning Standards. Authorised in 1975, the Illinois Textbook Loan Program provides a state-funded program for registered schools to order materials on-line through the Illinois Textbook Loan Program web site for loan to students. The

Illinois Textbook Loan Program web site provides a searchable database of 173,000 titles of state-purchased materials supplied by more than 100 bonded publishing companies.

Indiana

Title of State Standards: Indiana Academic Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: yes, curriculum: yes (English); EPE - 1997, 89%, B+; 1998, 81%, B-; 1999, 81%, B-; 2000, 83%, B; 2001, 81%, B-; 2002, 88%, B+, revision: yes; 2003, 81%, B-, revision: yes; 2004, 92%, A-, revision: yes; FF - 1998, C+; 2000, C+

Components: The Indiana Academic Standards present sample progress indicators. The Guides for Implementing Indiana Academic Standards provide guides for curriculum development by school corporations.

Subjects: Dance; English Language Arts; Foreign Languages; Health Education; Mathematics; Music; Physical Education; Science; Social Studies; Theatre; and Visual Arts.

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In February 1994, the Indiana Commission for Higher Education and the Indiana State Board of Education agreed to develop Core 40, a technology and college preparation curriculum for grades 9 to 12. Teams of teachers and higher education personnel, appointed to each subject, developed Core 40 competencies. Following reviews by subject teachers, the State Board adopted the Core 40 competencies in 1996. Legislation passed in 1999 formalised the Education Roundtable, created in 1998 to oversee the development of academic standards. Beginning in July 1999, Indiana Department of Education staff identified academic standards for English Language Arts and Mathematics contained in the Core 40 competencies and proficiency guides previously used by the Department of Education. Following public reviews and revision by the Education Roundtable, the State Board adopted the Indiana Academic Standards for English Language Arts in June 2000 and Mathematics in September 2000. The State Board also adopted Indiana Academic Standards for Foreign Languages, Music and Visual Arts in the summer of 2000, Science in November 2000, Physical Education in May 2001, Social Studies in August 2001, Health Education in December 2002, Theatre in February 2003, and Dance in May 2004.

Implementation Process: Beginning in August 2002, the Education Roundtable sought advice from local, state and national experts, researched best practices, reviewed state and national data, and collected input from stakeholders and the public to design the P-16 Plan for Improving Student Achievement. Intended to integrate efforts across all levels of the education system, the P-16 Plan for Improving Student Achievement was planned over two phases. In October 2003, the Education Roundtable approved the first phase, the strategic framework for aligning policies, resources and strategies. These referred to academic standards, assessment and accountability, teaching and learning, school leadership and governance, school readiness and early learning, academic progress for all students, college and workplace success, dropout prevention, higher education and continued learning, communication, and effective use of technology and resources. The second phase involved

evaluating current expenditures, realising efficiencies, leveraging resources, practising strategies and making critical investments before presenting the P-16 Plan for Improving Student Achievement to the state legislature, the governor and the State Board for approval. Teachers are provided with professional development in understanding the Indiana Academic Standards, teaching and learning approaches, and assessment techniques at nine regional educational service centres.

Revision Process: No process has been determined for revising the Indiana Academic Standards. The Guides for Implementing Indiana Academic Standards are reviewed periodically. The Foreign Languages Guide was revised in 2000.

Degree of State Control over Materials' Adoption: Reviewers advise the Advisory Committee on Textbook Adoptions about the selection of a prescribed number of approved materials in each subject for the state list adopted by the State Board for a six-year adoption cycle. The state-level adoption process includes Advisory Committee on Textbook Adoptions' hearings with publishers and the public following public reviews through displays at ten textbook review sites, and publishers' caravans.

Degree of Local Control over Materials' Adoption: School corporation committees select materials from the state adoption list, which are adopted by local school boards. School corporations may petition the Advisory Committee on Textbook Adoptions to adopt non-adopted materials.

Strategies Relating to Materials: The Foreign Languages Guide includes the Standards-based Textbook Evaluation Guide containing criteria intended to identify how well materials meet the Indiana Academic Standards. Publishers are required to align materials submitted for state-level adoption to the Indiana Academic Standards. In the spring of 2000, the Department of Education compiled the Indiana Reading List from recommended lists submitted by more than 100 schools. Intended to support the Indiana Academic Standards for English Language Arts, the Indiana Reading List was approved by the Education Roundtable in February 2001 following a two-month public review.

Iowa

Title of State Standards: none

Standards Grades: AFT - 1995, not developing standards; 1996, not developing standards; 1997, not developing standards; 1998, not developing standards; 1999, not developing standards; 2001, standards: no, curriculum: no; EPE - 1997, 58%, F; 1998, 54%, F; 1999, 39%, F; 2000, 40%, F; 2001, 31%, F; 2002, 31%, F, revision: no; 2003, 31%, F, revision: no; 2004, 33%, F, revision: no; FF - 1998, not available; 2000, not available

Components: Components vary from school district to school district.

Subjects: Subjects vary from school district to school district.

Grade Ranges: Grade ranges vary from school district to school district.

Developmental Process: In 1997, the Commission on Educational Excellence for the 21st Century endorsed a policy that each school or district should determine clear standards, a core curriculum, multiple assessment measures, whilst the state should develop a common set of core indicators for reporting student progress. In 1998, the Iowa General Assembly approved Accountability for Student Learning legislation (HF 2272) requiring schools to report results on a set of core indicators. Schools are required to develop five-year comprehensive school improvement plans through a process of community consultation. From 2001, data on student achievement for reading and mathematics in grades 4, 8, and 11, student achievement for science in grades 8 and 11, the dropout rate from grades 7 to 12, and the pursuit of post-secondary education and training were reported annually.

Implementation Process: School districts apply model standards, such as the national standards developed by subject associations and the New Standards Project, together with collaborative work on standards-related issues undertaken with McREL. Resources and professional development for school improvement are provided to school districts by the Department of Education and 15 area education agencies. In 1998, the Iowa Department of Education, area education agencies and local school districts collaborated to establish a web site and a CD-ROM, Standards Development for School Improvement in Iowa. Designed as a resource for school improvement committees, consisting of administrators, teachers, parents and students and representatives from the local community, Standards Development for School Improvement in Iowa is used as a discussion starter, a resource to find answers, a route to web sites, and a tool for self-assessment strategies.

Revision Process: Varies from school district to school district.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: No strategies were identified.

Kansas

Title of State Standards: Kansas Curricular Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 93%, A; 1998, 84%, B; 1999, 90%, A-; 2000, 90%, A-; 2001, 83%, B; 2002, 77%, C+, revision: yes; 2003, 88%, B+, revision: yes; 2004, 80%, B-, revision: yes; FF - 1998, D-; 2000, C+

Components: The Kansas Curricular Standards, which present content standards, benchmarks and indicators, provide assistance to school districts in developing local curricula and assessments.

Subjects: Civics-Government, Economics, Geography and History; Environmental Education; Foreign Language; Library Media; Listening, Viewing and Speaking; Mathematics; Music Education; Reading and Writing; and Science Education

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1989, the Kansas State Board of Education adopted ten strategic directions for educational improvement, which led to the development of Quality Performance Accreditation. Quality Performance Accreditation provided a process whereby Kansas' schools are accredited according to effective school principles, emphasis on creating a learning environment, staff training, emphasis on high academic standards, and an integrated curriculum. In adopting the Quality Performance Accreditation program, the Kansas Legislature directed the State Board to develop curricular outcomes for the core subjects in 1992. Advisory councils and writing committees were appointed in each subject to develop curricular outcomes in consultation with educators. As a consequence, the State Board adopted Kansas Curricular Standards for Mathematics in July 1993. In 1995, the Legislature mandated the development of curriculum standards and statewide assessments, which led to the appointment of advisory councils to revise the original sets of curricular outcomes by referring to the national standards and standards' documents from other states. Following review by teachers, the drafts were revised and presented to the State Board. The State Board adopted Kansas Curricular Standards for Science in June 1995, Social Studies in February 1996, and Communication Arts in July 1996.

Implementation Process: The Quality Performance Accreditation program was implemented in all school districts over a five-year period beginning in 1990-1991. Members of the advisory councils and Kansas State Department of Education staff provided professional development for teachers focusing on the content and appropriate teaching strategies to help students achieve the expectations in the Kansas Curricular Standards. Ten educational service centres offer professional development to assist schools in aligning local curricula to the Kansas Curricular Standards. In January 2000, the State Board published a guide, *Literacy Instruction NOW Knowledge for teachers implementing State Standards*, to assist teachers in making connections between the revised Kansas Curricular Standards for Reading and Writing, state assessments, and teaching practice.

Revision Process: The Kansas Curricular Standards are reviewed every three years. In August 1997, the State Board directed that academic standards committees should be convened to revise the Kansas Curricular Standards to bring greater clarity and specificity. Following review by educators in January 1998, the drafts for the core subjects were reviewed at eight public forums held across Kansas in March 1998 before being presented to McREL for review in April 1998. After revision, the State Board adopted the first revised versions of the Kansas Curricular Standards for Reading and Writing in June 1998, Mathematics in March 1999, Civics-Government, Economics, Geography and History in July 1999, Listening, Viewing and Speaking in March 2000, and Science Education in February 2001. Revised Kansas Curricular Standards were also adopted for Music Education in August 1998, Environmental Education in October 1999, Foreign Languages in

August 2000, and Library Media in May 2001. The State Board adopted the second revised versions of the Kansas Curricular Standards for Reading and Mathematics in July 2003.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The Department of Education collaborated with the Education Services and Staff Development Association of Central Kansas to develop a CD-ROM of reading resources aligned to the Kansas Curricular Standards for Reading and Writing.

Kentucky

Title of State Standards: Transformations - Kentucky's Curriculum Framework

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: yes, curriculum: yes (English, Mathematics, Science, Social Studies); EPE - 1997, 99%, A; 1998, 88%, B+; 1999, 89%, B+; 2000, 87%, B+; 2001, 91%, A-; 2002, 94%, A, revision: no; 2003, 94%, A, revision: no; 2004, 94%, A, revision: no; FF - 1998, F; 2000, D

Components: Transformations - Kentucky's Curriculum Framework, which organises academic expectations by learning goals, provides guidance to school districts for curriculum planning.

Subjects: Arts and Humanities; English Language Arts; Health Education; Mathematics; Physical Education; Practical Living Studies; Sciences; Social Studies; and Vocational Studies

Grade Ranges: primary level; intermediate level; middle level; and high school level

Developmental Process: Following legal action brought by 66 economically disadvantaged school districts in November 1985, the Kentucky Supreme Court ruled in June 1989 that the system of common schools in Kentucky was unconstitutional, and directed the Kentucky General Assembly to form the Task Force on Education Reform. Consisting of three subcommittees made up of legislators, national education specialists and administrative officials, the Task Force conducted hearings and gathered information during 1989. In March 1990, the Task Force submitted its recommendations for reforming the educational system to the Kentucky General Assembly. Passed in April 1990, the Kentucky Education Reform Act provided initiatives in the three broad areas of finance, curriculum and governance, which were designed to accomplish the most comprehensive educational reform conceived by a state legislature in the United States (Steffy and English, 1994). Between 1990 and 1996, the antiquated common school system, established in 1838, was replaced with a new educational system based on 13 major reform initiatives. These referred to accountability, assessment, curriculum, family resource and youth services centres, school-based decision-making, primary programs, extended school services, regional service centres, professional development, teacher certification, technology,

finance, and governance. The third initiative led to draft frameworks for English Language Arts, Mathematics, Vocational Studies, and the primary program being completed in June 1992, and draft frameworks for Practical Living Studies, Sciences, and Social Studies being completed in September 1992. Following review by teachers and higher education faculty in the autumn of 1992, the drafts were revised and presented to the Kentucky State Board for Elementary and Secondary Education in March 1993. Specifying the minimum content for each grade level, the Program of Studies was revised in 1998 by subject-based committees to ensure that all students are provided with the same content.

Implementation Process: Transformations - Kentucky's Curriculum Framework was disseminated to schools, colleges and universities, professional associations and other agencies in 1993. Two train-the-trainer sessions were provided to key staff members of colleges, universities and eight regional service centres. In 1998, an implementation manual for introducing the revised Program of Studies into Kentucky schools, and a guide for developing standards-based units of study from the academic expectations by using a planning map, were published.

Revision Process: A state regulation passed in the autumn of 1997 requires subjects to be revised according to a six-year cycle, so that the revised subjects are available in time for the state-level adoption of materials.

Degree of State Control over Materials' Adoption: Subject-based state textbook review teams and instructional material review teams advise the State Textbook Commission about the selection of a multiple number of recommended materials in each subject. The State Textbook Commission adopts the state list for a six-year adoption cycle. The state-level selection process includes State Textbook Commission hearings with publishers, and publishers' caravans.

Degree of Local Control over Materials' Adoption: School committees select materials from the state list of recommended materials, which are adopted by school councils. Schools may adopt non-adopted materials. Schools from the primary level to grade 8 formulate six-year purchasing plans for materials.

Strategies Relating to Materials: Transformations - Kentucky's Curriculum Framework contains an Instructional Material Resources subsection presenting a list of publications, programs, videos, professional associations and other resources. The rotation schedules for the curriculum review and the state-level materials adoption cycles are sequenced. Changes to the textbook statute, brought about by House Bill 545 in 1992 and Senate Bill 91 in 2000, were intended to provide schools with greater flexibility in selecting and purchasing the most appropriate materials to meet their curricular needs. The most significant changes enacted by House Bill 545 required schools from the primary level to grade 8 to formulate six-year purchasing plans for textbooks and supplementary materials, and allowed schools to purchase a wider range of materials with state funds. The most significant changes enacted by Senate Bill 91 required the State Textbook Commission to

approve a list of recommended materials, produce a consumer guide to be distributed to schools annually, and provide a process whereby schools notified the Department of Education of all 'off-list' purchases.

Louisiana

Title of State Standards: Louisiana Content Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: yes (English, Mathematics); EPE - 1997, 86%, B; 1998, 77%, C+; 1999, 80%, B-; 2000, 87%, B+; 2001, 85%, B; 2002, 92%, A-, revision: no; 2003, 92%, A-, revision: no; 2004, 98%, A, revision: no; FF - 1998, C-; 2000, C+

Components: The Louisiana Content Standards organise benchmarks by strands. The Handbooks present the framework, a sample module, and selected activities. The Model Curriculum Framework, which presents a framework for organising the grade-level expectations in the core subjects, provides a guide for developing local curricula.

Subjects: Arts; English Language Arts; Foreign Language; Health and Physical Education; Mathematics; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: Reform of mathematics and science education was initiated through the Louisiana Systemic Initiatives Program, funded by a grant obtained from the National Science Foundation in 1990. A panel, appointed to develop Mathematics and Science frameworks, divided into two sub-panels, each consisting of state officials, teachers, educators working with special needs and ethnic groups, and teachers from institutions of higher education. After assessing current needs in Louisiana, each sub-panel developed a strategic plan, and divided into two committees, one of which developed the standards, whilst the other wrote the grade-level handbooks. State education leaders and national experts in curriculum reform reviewed the standards' drafts, whilst teachers across Louisiana reviewed the drafts of the handbooks. The Louisiana State Board of Elementary and Secondary Education adopted the Louisiana Content Standards for Mathematics and Science in April 1996. A State Content Standards Task Force, consisting of teachers, principals, subject supervisors, representatives from business and higher education, assessment specialists, parents, and students, was appointed to oversee the development of standards in the other subjects. Content area teams, consisting of teachers from across Louisiana, were formed to develop the drafts, which were completed in May 1996. The drafts were then presented to leaders from school districts for consultation in December 1996 before being reviewed by school districts. Following completion of the review in March 1997, the drafts were revised before being adopted by the State Board in May 1997. In 2003, almost 300 teachers developed grade-level expectations for the Louisiana Content Standards in the core subjects. Following public review in August, the State Board approved the grade-level expectations in October 2003. Directed by the State Board, the

Louisiana Department of Education contracted the Appalachia Educational Laboratory to review each district's curriculum. Consideration of the report of the review led the Department of Education to develop a model curriculum framework, which was released in May 2004.

Implementation Process: In 1999, the Department of Education appointed planning and development teams to oversee the establishment of a web site, *Making Connections*, providing a searchable database of lesson plans, web site resources and assessment items. Teams of teachers, who collected lesson plans developed by Louisiana teachers, identified web sites, reviewed software products and gathered assessment materials, linked these resources to the Louisiana Content Standards. In addition, a software preview centre was established in the Louisiana Center for Educational Technology at Baton Rouge to house the software collection, so teachers could preview items before purchase.

Revision Process: Representatives from the Department of Education and professional associations in each subject review the Louisiana Content Standards each year. The Louisiana State Board of Elementary and Secondary Education adopted revised Louisiana Content Standards for the Arts in March 2001 and English Language Arts in March 2004.

Degree of State Control over Materials' Adoption: Reviewers advise the State Textbook Adoption Committee about the selection of a prescribed number of approved materials in each subject for the state list adopted by the State Board for a seven-year adoption cycle. The state-level selection process includes State Textbook Adoption Committee hearings with publishers and the public, public hearings by the State Board following public reviews through displays at eight sites across Louisiana, and publishers' caravans.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. School districts may petition the Department of Education to adopt non-adopted materials.

Strategies Relating to Materials: The State Textbook Adoption Policy and Procedure Manual (Bulletin 1794) was revised in 1997 to ensure that materials considered for adoption are aligned with the Louisiana Content Standards. Specific changes included beginning state time-lines earlier, requiring publisher representations at orientation conferences on content, requiring publishers to submit correlations, replacing publisher presentations with a written question-and-answer arrangement, and requiring school districts to adopt aligned materials in the core subjects and fully implement them within three years. *Making Connections* contains teacher-developed lesson plans. The School Book Supply Company of Louisiana provides a searchable database of state-adopted materials and an on-line ordering system for Louisiana schools on its web site.

Maine

Title of State Standards: Learning Results

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 91%, A-; 1998, 84%, B; 1999, 79%, C+; 2000, 79%, C+; 2001, 76%, C; 2002, 76%, C, revision: yes; 2003, 76%, C, revision: yes; 2004, 75%, C, revision: yes; FF - 1998, D-; 2000, D+

Components: The Common Core of Learning provides a curriculum rationale. The Learning Results present guiding principles, describing the characteristics of a well-educated person, and organise content standards and performance indicators for developing individual learning plans.

Subjects: Career Preparation; English Language Arts; Health and Physical Education; Mathematics; Modern and Classical Languages; Science and Technology; Social Studies; and Visual and Performing Arts

Grade Ranges: pre-K to 2; 3 to 4; 5 to 8; and secondary school

Developmental Process: Following enactment of the Education Reform Act of 1984, Maine's schools undertook a wide variety of initiatives, which informed the development of seven goals for education. Beginning in September 1989, a series of meetings and regional forums were convened at which Maine citizens developed the seven goals as a plan of action for the 1990s. In order to address Goal 1, the Commission on Maine's Common Core of Learning, formed by Governor John McKernan in February 1989, developed a draft outlining a broad vision of what education should be like to prepare students for the twenty-first century. The draft was presented for public review at eight forums in November 1989, before being revised and distributed to schools in 1990. In 1993, the Maine Legislature directed the Maine State Board of Education to establish the 33-member Task Force on Learning Results, which developed goals and standards for student performance, and recommended a plan for achieving them. Following presentation of the Task Force's report in January 1996, the Legislature approved six guiding principles, and required the Maine Department of Education to develop Learning Results. As a consequence, the 22-member Critical Review Committee was appointed in July 1996 to prepare a draft, which was distributed to educators for consultation, and then revised on the basis of responses. The State Board and the Department of Education held a series of public hearings on the revised draft in January 1997, prior to its final revision and subsequent approval by the Maine Legislature in May 1997.

Implementation Process: The Learning Results Steering Committee coordinated implementation of the Learning Results over a five-year period commencing in 1997-1998. The Learning Results Team provided information, structures, processes and materials for school districts, whilst the Regional Educational Services Team offered assistance to school districts across Maine's nine regions to implement the Learning Results. A comprehensive planning process, based on the work of Senge et al. (1994), is used to meet the needs of individual students in implementing the Learning Results. A planning team of teachers develops a profile of each student before the commencement of the school year by

completing a Personalised Opportunities-to-Learn template. The template identifies the student's attitudes and beliefs about learning, the physical issues related to the student's learning, and the issues related to the student's learning interactions and style. The planning team then develops an individualised program for the student by adapting the performance indicators to accommodate the student's needs in meeting the guiding principles and content standards. Assessment of the student's progress is determined by applying a tool called Personalised Assessment Choices, which guides the planning team to select appropriate techniques for assessment (Baker and Gervais, 1997). The Department of Education developed the videotape, *Personalised Learning for All*, to train teachers in the comprehensive planning process. Focusing on applying the Learning Results in secondary schools, the Commission on Secondary Education identified six core principles underlying secondary education. In September 1998, the Commission recommended that Maine high schools should adopt 15 core practices addressing teaching and learning. Beginning in 1998, the Southern Maine Partnership, a school-university collaborative of 33 school districts and the University of Southern Maine, developed a web site, Electronic Learning Marketplace, providing a searchable database containing teacher-developed lessons, projects and learning activities aligned to the Learning Results. Appointed in July 2002, the 11-member Task Force to Review the Status of Implementation of the System of Learning Results surveyed school board chairs, superintendents, principals and a random sample of teachers from all school administrative units. The Task Force found that school administrative units had more than half completed aligning local curricula to the Learning Results, purchased new materials to meet the requirements of the Learning Results, but had made less progress on implementing local assessments. The Task Force recommended that more time should be made available to implement the Learning Results, the level of funding for implementation should be reviewed, and greater use should be made of regional centres.

Revision Process: The Learning Results are revised periodically in the light of experience, research, public commentary, and review of similar documents developed by groups in other settings.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The Department of Education recommends that school districts should base the selection of materials on their alignment to the Learning Results.

Maryland

Title of State Standards: Maryland Content Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 100%, A; 1998, 90%, A-; 1999, 93%, A; 2000, 97%, A; 2001,

98%, A; 2002, 98%, A, revision: yes; 2003, 93%, A, revision: yes; 2004, 93%, A, revision: yes; FF - 1998, F; 2000, C+

Components: The Maryland Content Standards organise content standards by strands. The Voluntary State Curriculum, which organises indicators and objectives by content standards, provides a model curriculum from which local curricula are developed.

Subjects: English Language Arts; Mathematics; Science; and Social Studies

Grade Ranges: pre-K; K; 1; 2; 3; 4; 5; 6; 7; and 8

Developmental Process: In 1987, Governor William Schaeffer created the Commission on School Performance, which recommended a package of reforms in 1989, including a new testing program in the vital core of student achievement. As a consequence, five learning outcome development committees composed of subject specialists, used a set of curriculum frameworks published by the Maryland State Department of Education in the mid 1980s as foundations for identifying skills and knowledge to develop Maryland Learning Outcomes for grades 3, 5 and 8. Adopted by the Maryland State Board of Education in May 1990, they were supplemented by Maryland Learning Outcomes for Fine Arts, approved in October 1997. Composed of subject experts, five content teams in cooperation with the Maryland Business Roundtable developed Maryland Core Learning Goals for the core subjects and cross-curricular Skills for Success, which were approved by the State Board in 1996. Content standards for the core subjects, developed through a consultative process involving more than 200 teachers, administrators, and consultants from the Council for Basic Education (CBE), were reviewed by an external expert review panel, consisting of representatives from universities and national subject associations. Following public review and subsequent revision, the final drafts were presented in December 1998 to the State Board, which accepted the drafts for Mathematics, Science and Social Studies. However, those for English Language Arts were subjected to further field review and expert revision prior to State Board approval of the Maryland Content Standards for the core subjects in July 1999 (Grasmick, 1999).

Implementation Process: Disseminated in May 2000, the Maryland Content Standards were implemented as part of the Maryland School Performance Program's ten-step improvement process. First, the School Improvement Team identifies training and information that the school's staff needs to understand the school improvement process. Second, the School Improvement Team analyses data on student achievement and participation. Third, the School Improvement Team identifies the priority needs to be addressed in a school-wide improvement effort. Fourth, the School Improvement Team collects data on priority questions, hypothesises causes, collects evidence, and identifies the causes. Fifth, the School Improvement Team reviews long-term goals to identify annual objectives and determines evidence for attaining the objectives. Sixth, the School Improvement Team selects strategies to be implemented to address particular problems. Seventh, the School Improvement Team develops an implementation plan. Eighth, the School Improvement

Team collects and analyses data to monitor progress towards attaining the objectives. Ninth, the School Improvement Team determines whether revisions to the plan are needed. Tenth, the School Improvement Team develops a plan to support school staff in implementing changes.

Revision Process: In February 2001, the State Department of Education appointed the 40-member Visionary Panel for Better Schools to review the past decade of school reform to inform future policy-making. From a survey of over 100 stakeholder groups, the Panel identified the seven issues of accountability, achievement gaps, assessment, leadership, learning, public support and teacher quality as important. Formed to investigate each issue, seven subgroups worked from June to November of 2001 examining past progress and recommending future directions. The Panel consolidated the recommendations of the subgroups into a report, which was reviewed by stakeholders at regional hearings. Presented to the state superintendent in January 2002, the final report recommended developing a voluntary standards-based statewide curriculum, aligning the curriculum to assessment, and widening the focus of accountability from low-performing schools to all schools. As a consequence of the final report of the Visionary Panel for Better Schools and the Bridge to Excellence in Public Schools Act passed by the General Assembly in 2002, a new plan for school reform called Achievement Matters Most was designed. It set five goals for improving student achievement, aligning curriculum, instruction and testing, raising the quality of teaching, establishing safe schools, and involving parents in schooling. As part of Achievement Matters Most, a Voluntary State Curriculum, developed over the summer of 2003 by more than 300 teachers, district supervisors and Department of Education staff, and reviewed by other teachers and subject experts from across Maryland, was released in August 2003.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: No strategies were identified.

Massachusetts

Title of State Standards: Massachusetts Curriculum Frameworks

Standards Grades: AFT - 1995, no; 1996, no; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: yes (English, Mathematics, Science, Social Studies); EPE - 1997, not available, I; 1998, 93%, A; 1999, 91%, A-; 2000, 93%, A; 2001, 89%, B+; 2002, 90%, A-, revision: no; 2003, 92%, A-, revision: no; 2004, 89%, B+, revision: no; FF - 1998, C; 2000, B-

Components: The Common Core of Learning provides a curriculum rationale. The Massachusetts Curriculum Frameworks organise learning standards by strands.

Subjects: Arts; Comprehensive Health; English Language Arts; Foreign Languages; History and Social Science; Mathematics; and Science and Technology

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In June 1993, Governor William Weld signed into law the Education Reform Act, which led to system-wide reform consisting of several phases. In September 1993, a 40-member Commission was formed to develop a Common Core of Learning, which articulated three goals: linking and communicating; gaining and applying knowledge; and working and contributing. Adopted by the Massachusetts State Board of Education in July 1994, the Common Core of Learning provided the foundation for the next phase, the development of the Massachusetts Curriculum Frameworks. However, the Massachusetts Department of Education had commenced developing curriculum frameworks for Mathematics, and Science and Technology in 1992 through the National Science Foundation-funded Partnerships Advancing the Learning of Mathematics and Science (PALMS). In January 1993, a set of recommendations for pre-kindergarten to grade 8 was produced by consultants from the Technical Education Resource Centers, which formed the basis for developing and extending later drafts to include grades 9 to 12, work undertaken by separate committees overseen by the PALMS Steering Committee. The State Board adopted the Mathematics, and Science and Technology frameworks in December 1995. In 1993, curriculum framework development committees were appointed to develop successive drafts in the other five subjects, which were reviewed and revised on the basis of responses from subject-based focus groups over a two-year period. Following public consultation and revision, the State Board adopted the Arts, Comprehensive Health, and World Languages frameworks in January 1996, the English Language Arts framework in January 1997, and the History and Social Science framework in June 1997. The Statewide Advisory Council was appointed to develop a draft for the common chapters of the frameworks, which was subsequently presented for review to 1,076 study groups before being revised and adopted by the State Board in January 1997.

Implementation Process: The Education Reform Act required each school district to develop an improvement plan, which should include implementation of the Common Core of Learning and the Massachusetts Curriculum Frameworks. The Department of Education recommended that two sample guidelines should be used to facilitate implementation. The *District and School Assessment on the Curriculum Frameworks* should be applied to document the existing curriculum. *Charting a Course for the Future Action Plan* should be used to develop an improvement plan. The plan should consist of six elements: processes for aligning the district curriculum with the curriculum frameworks; needed resources; promotion of suggested teaching, learning and assessment approaches; a professional development plan; public information about the plan; and a cycle for periodic review and revision of each subject. Beginning in 1995, the Department of Education sponsored summer content institutes for teachers focusing on the learning standards in the curriculum frameworks. PALMS implemented a systemic change model in 200 school districts between 1998 and 2001 involving curriculum plans, linking the Massachusetts Curriculum

Frameworks and assessment, and professional development activities supported by a network of regional providers.

Revision Process: The Education Reform Act requires that the Massachusetts Curriculum Frameworks to undergo periodic updating, improvement or refinement in order to ensure they reflect current research, the results of the Massachusetts Comprehensive Assessment System, and recommendations from experts and practitioners. After revision by curriculum framework review panels, the curriculum frameworks are presented for public comment on the Internet and revised on the basis of the public's responses before presentation to the State Board. The State Board adopted revised frameworks for Foreign Languages in March 1999, Arts in June 1999, Comprehensive Health in October 1999, Mathematics in July 2000, English Language Arts in November 2000, Science and Technology in December 2000, and History and Social Science in October 2002.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The revised Mathematics, Science and Technology, and History and Social Science frameworks include sets of criteria for selecting materials. The revised English Language Arts framework includes lists of suggested authors and illustrators. The Department of Education published the *Massachusetts Guide to Choosing and Using Curricular Materials on Genocide and Human Rights Issues* in June 1999, and the *Massachusetts History and Social Science Guide for Pre-Kindergarten to Grade 4: A Model Scope and Sequence and Sample Resources* in June 2000.

Michigan

Title of State Standards: Michigan Curriculum Framework

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, no; 1999, no; 2001, standards: no, curriculum: yes (Social Studies); EPE - 1997, 90%, A-; 1998, 89%, B+; 1999, 81%, B-; 2000, 85%, B; 2001, 86%, B; 2002, 76%, C, revision: no; 2003, 82%, B-, revision: no; 2004, 85%, B, revision: no; FF - 1998, D-; 2000, D-

Components: The Michigan Curriculum Framework, which organises content standards and benchmarks by strands and includes toolkits and resources, provides model standards for school districts to develop local curricula.

Subjects: Arts Education; Career and Employability Skills; English Language Arts; Health Education; Life Management Education; Mathematics; Physical Education; Science; Social Studies; Technology Education; and World Languages

Grade Ranges: early elementary; later elementary; middle school; and high school

Developmental Process: Public Act 25 passed by the Michigan Legislature in 1990 required the Michigan State Board of Education to develop model core curriculum outcomes to provide guidance for school districts to develop curricula. In 1993, the Michigan

Department of Education initiated the development of model content standards for the core subjects in collaboration with five state universities. The Curriculum Frameworks Joint Steering Committee, consisting of representatives from business, education, government, labour and professional organisations, oversaw writing teams in each subject, which used the national standards to develop drafts for the model content standards. In the autumn of 1994, the drafts for the core subjects were submitted to field reviews. At the same time, public hearings were conducted into the administrative rules governing what students should know and are able to do in the core subjects. Following analysis of the comments from the field reviews and public hearings, the drafts for the core subjects were revised. The State Board adopted the model content standards for the core subjects in July 1995. Subsequently, benchmarks for the core subjects were developed by teams of subject specialists, presented for public review by more than 2,000 Michigan citizens, and trialed at school demonstration sites.

Implementation Process: The Michigan Legislature passed the Revised School Code, effective from July 1996, which established the status of the model content standards in the core subjects, requiring school districts to establish a local core curriculum, which may or may not be based on the Michigan Curriculum Framework. School districts were required to have implemented content standards in the core subjects in 1997-1998. The Michigan Department of Education recommended that school districts should align their curricula to the Michigan Curriculum Framework by conducting discrepancy analyses using a series of five toolkits, offer ongoing professional development opportunities to their staffs, and provide an accreditation procedure encompassed within a process of continuous school improvement. Staff development to align local curricula to the Michigan Curriculum Framework is provided by 25 mathematics and science centres.

Revision Process: In June 2002, the Department of Education presented a plan for revising the Michigan Curriculum Framework. The plan proposed incorporating model content standards for the non-core subjects approved by the State Board in 1997, defining content at each grade level, placing emphasis on teaching and learning, revising assessment requirements, and updating professional development requirements. Commencing in June 2002, educator development teams reviewed the grade-span benchmarks in the Michigan Curriculum Framework to create grade-level expectations and identify core essential learnings. In July 2003, Achieve reviewed the grade-level expectations prior to their approval by the State Board in November 2003. Following final revision, the grade-level expectations were disseminated in March 2004.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: A resource for teachers to correlate materials and test instruments to the standards and benchmarks for Mathematics, and the *Science Education*

Guidebook, published in 1996, containing lists of materials for Science, were developed to support the Michigan Curriculum Framework. Founded in 1996, MediaSeek Technologies based at Bellevue, Washington correlated the products of publishing companies to 130 standards' documents from the United States and Canada using a resource correlator, and provided ExploraSource, a searchable database of correlations on print, audiovisual, computer-based and web-based materials published by 330 publishing companies. In February 2000, MediaSeek Technologies was acquired by bigchalk.com based at Berwyn, Pennsylvania, which continued this service as the Integrated Classroom. In December 2002, bigchalk.com was acquired by ProQuest Company based at Ann Arbor, Michigan, which continued the Integrated Classroom.

Minnesota

Title of State Standards: Minnesota Academic Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: yes (Mathematics, Science); EPE - 1997, not available, I; 1998, 79%, C+; 1999, 70%, C-; 2000, 70%, C-; 2001, 57%, F; 2002, 62%, D-, revision: yes; 2003, 62%, D-, revision: yes; 2004, 73%, C, revision: yes; FF - 1998, F; 2000, D-

Components: The Minnesota Academic Standards organise content standards and benchmarks by strands. The Minnesota Curriculum Frameworks provide guidance for curriculum selection and development, instruction and assessment at the local level.

Subjects: Arts; English Language Arts; Mathematics; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: The process of defining what students should know at the time of school graduation began in 1987, when the Minnesota State Board of Education formally articulated its intention to develop an outcome-based educational system. In 1989, the State Board adopted model learner outcomes to be used as a basis for developing curricula, and essential learner outcomes to be used as a basis for assessment in each subject. Appointed in 1990, the Graduation Standards Committee, consisting of representatives from education, business and citizen groups, developed the first drafts of the graduation rule, which were reviewed at 43 public hearings and meetings held in 1991. Following legislation mandating a results-oriented graduation rule, the State Board developed a two-tiered graduation rule of basic and high standards in 1993. The process for developing the standards involved teams of teachers considering various subjects, the requirements that should be specified, and the assessments that might be used. The State Board conducted public hearings on the drafts in the spring of 1994, and consulted business, military and higher education communities in 1995. Teachers developed performance packages at 23 pilot sites across Minnesota in 1994 and 1995. The State Board approved the high standards of the Minnesota Graduation Standards in May 1998. Following the formation of a partnership between educators, businesses and the state government, SciMath Minnesota

developed frameworks for Science, published in 1997, and Mathematics, published in 1998, through professional discussions, writing conferences, individual and group reviews and editing sessions. Through the collective efforts of teachers from schools and institutions of higher education and consultants from subject associations, the Minnesota Department of Children, Families and Learning developed a People and Cultures framework published in 1999. The Minnesota Council in Economic Education and the Department of Children, Families and Learning developed an Economic Systems framework published in 2001. Following election of Republican Governor Tim Pawlenty in November 2002, a plan was released in January 2003 to develop Minnesota Academic Standards to replace the Minnesota Graduation Standards. Committees of teachers, representatives of higher education, business people and parents, appointed for the first round in February 2003 and the second round in July 2003, reviewed standards from other states to develop draft standards. Following reviews of the draft standards at public hearings across the state, the Minnesota Legislature approved the Minnesota Academic Standards in the first round for the Arts, English Language Arts and Mathematics in May 2003, and the second round for Science and Social Studies in May 2004.

Implementation Process: The Minnesota Graduation Standards were fully implemented in 1998-1999. However, the Department of Children, Families and Learning trained teachers to implement the Minnesota Graduation Standards through formative and summative conferences, which continued over a three-year period commencing in 1996. The Department of Children, Families and Learning devised a best practice network consisting of 13 regional teams, composed of exemplary practitioners knowledgeable in research-based practices and prepared to share their expertise. They worked closely with their regional Minnesota Educational Effectiveness Program coordinators in assisting schools to implement the Minnesota Graduation Standards. In 1998, the Department of Children, Families and Learning established the Minnesota Electronic Curriculum Repository, a web site providing a searchable database of large processes and concepts, assessment tasks, learning activities, learning resources and state model performance assessments, which were aligned to the content standards in the Minnesota Graduation Standards. Between 1997 and 2001, the Department of Children, Families and Learning collaborated with the North Central Regional Educational Laboratory and the North Central Mathematics and Science Consortium to design a web site, EdSTAR Minnesota. EdSTAR Minnesota provides research on themes and issues relating to each learning area, and information on the levels and strands of student understandings to support achievement of the Minnesota Graduation Standards. The Department of Education formed quality teaching networks in each subject area to provide schools with professional development for implementing the Minnesota Academic Standards.

Revision Process: In September 1998, the Department of Children, Families and Learning appointed the 11-member Graduation Standards Implementation Advisory Committee to

review the organisation, rigour, clarity, relevance and consistency of the Minnesota Graduation Standards. In 1999, controversy emerged during public debate over the Profile of Learning, the structure of learning areas for the high standards. Conservative groups organised into the Maple River Education Coalition, formed in 1998 by Renee Doyle and other parents from school districts in south central Minnesota, rallied at the state capitol in St Paul in April 1999 to urge the Legislature to repeal the Profile of Learning. On the other hand, the Department of Children, Families and Learning proposed modifying it, granting waivers to school districts wishing to experiment with the Profile of Learning, reviewing and clarifying key terms, improving practices for implementation, and establishing a revision process. The Legislature debated the issue in 1999 with the House passing a bill to replace the Profile of Learning with rigorous academic standards, but rejecting its elimination, whilst the Senate supported a proposal to give school districts the option of reducing the number of required performance packages. In May 2000, both houses of the Legislature compromised by passing modifications to the Profile of Learning allowing school districts to phase in the number of standards required for students to graduate, and removing the requirement to use state and local performance packages (Keller, 2000). Appointed in September 2000, the 12-member Academic Panel recommended in February 2001 that the learning areas should be consolidated, a review cycle should be established for continuous improvement of the Profile of Learning, and a group of educators should be convened to review the standards. In May 2003, the Department of Children, Families and Learning established a four-year cycle commencing in 2006 for reviewing the Minnesota Academic Standards.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The Science framework contains guidelines for selecting materials, and a materials selection tool. The Mathematics framework contains an annotated list of resources developed by curriculum projects. The People and Cultures and the Economic Systems frameworks contain bibliographies of materials. A fair held in the summer of 2000 focused on collecting science and mathematics materials aligned to the Minnesota Graduation Standards. The themes, issues and student understandings on EdSTAR Minnesota are linked to a resource library containing assessment, curriculum, software, web, video and audio resources.

Mississippi

Title of State Standards: Mississippi Curriculum Frameworks

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: yes (English); EPE - 1997, 88%, B+; 1998, 89%, B+; 1999, 77%, C+; 2000, 77%,

C+; 2001, 62%, D-; 2002, 67%, D+, revision: yes; 2003, 73%, C, revision: yes; 2004, 82%, B-, revision: yes; FF - 1998, D; 2000, C-

Components: The Mississippi Curriculum Frameworks, which organise competencies and objectives by strands, provide school districts with strategies for local management of teaching and learning.

Subjects: Business and Technology; Comprehensive Health; Foreign Language; Language Arts; Mathematics; Physical Education; Science; Social Studies; and Visual and Performing Arts

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1982, the Mississippi State Board of Education passed the Education Reform Act consisting of a package of reforms. These included the establishment of a kindergarten program, the employment of reading specialists for grades 1 to 3, a comprehensive assessment system, stringent graduation requirements, and a compulsory attendance law aimed at improving student achievement. In 1984, a commission designed and implemented a school accreditation system based on measures that focused on the extent to which schools should help students master defined content and objectives. The new accreditation system changed the process from voluntary to compulsory by establishing a uniform curriculum for all school districts.

Implementation Process: The Mississippi Department of Education conducts orientation and content specific training sessions to assist teachers implement the Mississippi Curriculum Frameworks. In 2001, the Department of Education collaborated with MCI WorldCom Foundation to develop MarcoPolo Discovers Mississippi, a web site linking lesson plans in WorldCom's MarcoPolo database to the Mississippi Curriculum Frameworks.

Revision Process: Undertaken on a rotation schedule over a six-year cycle, revision of the Mississippi Curriculum Frameworks is conducted by subject-based writing teams, consisting of teachers. Approximately three years after a framework is implemented, a writing team is chosen to review the current framework and make changes based on best practices in the subject as reflected in state and national trends. During each stage of the revision process, the draft is reviewed by a curriculum advisory council, and then revised by the writing team. Following compilation, the draft is distributed to teachers across Mississippi for a field review. The draft is then revised by the writing team on the basis of responses, and presented to the State Board for approval. The Mathematics framework was revised in 1994. The Business and Technology, Comprehensive Health, Fine Arts, Language Arts, Physical Education and Science frameworks were revised in 1996. The Social Studies framework was revised in 1998. The Foreign Language, Language Arts and Mathematics frameworks were revised in 1999. The Business and Technology framework was revised in 2000. The Science framework was revised in 2001. The Visual and

Performing Arts framework was revised in 2003. The Social Studies and Business and Technology frameworks were revised in 2004.

Degree of State Control over Materials' Adoption: Subject-based state rating committees advise the State Board about the selection of a prescribed number of approved materials in each subject for the state list adopted by the State Board for a five-year adoption cycle. The state-level selection process includes state rating committee hearings with publishers, and local textbook hearings involving publishers' caravans.

Degree of Local Control over Materials' Adoption: School district committees select materials from the state adoption list, which are adopted by local school boards. School districts may adopt non-adopted materials.

Strategies Relating to Materials: The 2004 Social Studies framework contains a list of printed resources. The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. Publishers are required to correlate materials submitted for state-level adoption to the Mississippi Curriculum Frameworks. Changes to the textbook statute, enacted by the Mississippi Legislature in 1994, allowed school districts to purchase non-adopted materials with state funds, but required them to submit an annual inventory of all materials used in schools. The School Book Supply Company of Mississippi provides a searchable database of state-adopted materials and an on-line ordering system for Mississippi schools on its web site.

Missouri

Title of State Standards: Show-Me Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 92%, A-; 1998, 88%, B+; 1999, 72%, C-; 2000, 78%, C+; 2001, 78%, C+; 2002, 84%, B, revision: no; 2003, 87%, B+, revision: no; 2004, 87%, B+, revision: no; FF - 1998, D-; 2000, D+

Components: The Show-Me Standards present knowledge and performance standards. Missouri's Frameworks for Curriculum Development, which organise guiding questions and skills statements keyed to knowledge and performance standards and optional learning activities by strands, provide model curricula for aligning local curricula to the Show-Me Standards.

Subjects: Communication Arts; Fine Arts; Health and Physical Education; Mathematics; Science; and Social Studies

Grade Ranges: K to 4; 5 to 8; and 9 to 12

Developmental Process: In 1985, the Missouri General Assembly passed the Excellence in Education Act consisting of a package of reforms, which included provisions for student testing requiring identification of key skills or learner outcomes. In 1986, the Missouri Department of Elementary and Secondary Education released a set of core competencies and key skills, which defined a framework for school districts to organise their curricula. In

May 1993, the Missouri Legislature passed the Outstanding Schools Act, requiring the Missouri State Board of Education to develop performance standards defining the knowledge, skills and competencies that students should attain before graduation. In October 1993, the State Board appointed working groups of teachers, which developed the first draft of the performance standards. Following reviews by two committees in February 1994, this draft was distributed for consultation within the educational community in May 1994, and public review at ten regional conferences held in September and October of 1994. After revision by the working groups, the second draft was distributed to focus groups, selected teachers and 800 citizens for review between February and April of 1995. The Commission on Performance, a group of elected officials, business and education leaders, directed the working groups to rewrite the performance standards in everyday language and include content standards. After completion of the third draft, the Commission endorsed the proposed Show-Me Standards in October 1995 before a final period of public comment culminating in hearings at seven sites across Missouri. In January 1996, the State Board adopted 73 Show-Me Standards, categorising content into six subjects and performance by four goals: gathering, analysing and applying information and ideas; communicating effectively; recognising and solving problems; and making decisions and acting as responsible members of society. Framework committees, which were appointed to develop frameworks for curriculum development, submitted drafts to school districts for consultation in March 1996. Following revision, the State Board adopted Missouri's Frameworks for Curriculum Development for Communication Arts, Fine Arts, Health and Physical Education, Mathematics, Science, and Social Studies in November 1996, and Foreign Language in May 2001.

Implementation Process: Within one year of their adoption, each school district was required to have used Missouri's Frameworks for Curriculum Development as a basis for developing a curriculum guide in one subject, together with a plan for aligning the remaining subjects to the Show-Me Standards. Developed by school districts through a consultative process involving local school board members, administrators, teachers, community members and students, curriculum guides were implemented following adoption by local school boards. In May 1997, the Department of Elementary and Secondary Education published a guide, *Developing Curriculum Guides Aligned to Missouri's Show-Me Standards*, to assist school districts. Nine regional professional development centers assisted school districts implement the Show-Me Standards through Select Teachers as Regional Resources, a program in which trained teacher consultants provided professional development within their regions.

Revision Process: No process has been determined for revising the Show-Me Standards and Missouri's Frameworks for Curriculum Development. The curriculum guides are revised on a regular basis through a process of review.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: No strategies were identified.

Montana

Title of State Standards: Montana Content and Performance Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 65%, D; 1998, 65%, D; 1999, 50%, F; 2000, 57%, D-; 2001, 40%, F; 2002, 40%, F, revision: yes; 2002, 40%, F, revision: yes; 2003, 40%, F, revision: yes; 2004, 60%, D-, revision: yes; FF - 1998, F; 2000, D-

Components: The Montana Content and Performance Standards present content standards and benchmarks. The Curriculum Guides provide model curricula from which local curricula are developed.

Subjects: Arts; Career and Vocational Technical Education; Communications Arts; Health Enhancement; Library Media; Mathematics; Science; Social Studies; Technology; Workplace Competencies; and World Languages

Grade Ranges: 4; 8; and 12

Developmental Process: In 1987, the Montana Legislature directed the Montana Board of Public Education to provide a new definition of basic education adequate to prepare Montana's children for the twenty-first century. As a consequence, the Board of Public Education initiated Project Excellence, in which discussion groups of educators, parents, community members, business people and students, presented formal recommendations leading to the development of the Montana School Accreditation Standards adopted in 1989. Program area standards, which were included in the Montana School Accreditation Standards, incorporated model learner goals, which provided the basis for school districts to develop their own learner goals. Subsequently, the Montana Office of Public Instruction and state subject associations appointed advisory councils and writing teams to develop curriculum guides in each subject. After the advisory council determined the philosophical framework for each curriculum guide, the writing team developed the draft, which was reviewed by the advisory council and focus groups before presentation for approval. In 1998, a process was initiated to develop content and performance standards over four rounds. Developed by teams of teachers, administrators, parents and representatives from professional associations and higher education, the drafts were reviewed by the educational community before presentation to the Board of Public Education. The drafts were then reviewed by the public and revised on the basis of responses before adoption by the Board of Public Education. Montana Content and Performance Standards in the first round were adopted for Communications Arts (Reading) and Mathematics in September 1998. Montana Content and Performance Standards in the second round were adopted for Communications Arts (Literature, Media Literacy, Speaking and Listening, and Writing),

Health Enhancement, Science, Technology, and World Languages in September 1999. Montana Content and Performance Standards in the third round were adopted for the Arts, Library Media, Social Studies and Workplace Competencies in September 2000. Montana Content and Performance Standards in the fourth round were adopted for Career and Vocational Technical Education in September 2001. In 2002, the Office of Public Instruction reconstituted the writing teams to develop grade-level expectations for Mathematics and Reading.

Implementation Process: In September 1991, each school district initiated a curriculum development process in at least one subject, and followed an approved plan until the 1999-2000 school year, when all subjects were aligned with the curriculum development process. In 1998 and 1999, school districts began replacing the learner goals in their curricula with the Montana Content and Performance Standards. School districts were required to align local curricula, which are developed through a consultative process involving local communities, with the Montana Content and Performance Standards by the end of the 2003-2004 school year, and to synchronise the existing review cycle to the state's schedule for revising standards.

Revision Process: The Montana Content and Performance Standards are reviewed and revised over a five-year cycle commencing in July 2003. School districts are required to employ a cycle, not exceeding five years, to review each subject.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards. School districts employ a cycle of no longer than five years to review materials.

Strategies Relating to Materials: The cycles for reviewing local curricula and materials are sequenced.

Nebraska

Title of State Standards: Nebraska Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: no, curriculum: no; EPE - 1997, 61%, D-; 1998, 64%, D; 1999, 72%, C-; 2000, 72%, C-; 2001, 61%, D-; 2002, 54%, F, revision: no; 2003, 52%, F, revision: no; 2004, 66%, D, revision: no; FF - 1998, F; 2000, C+

Components: The Nebraska Standards, which present content and performance standards, provide model standards from which local standards are developed. The Nebraska Curriculum Frameworks, which organise sample targets and sample activities by principles, are designed to assist school districts make decisions regarding local curriculum development.

Subjects: Mathematics; Reading-Writing; Science; and Social Studies-History

Grade Ranges: K to 1; 4; 8; and 12

Developmental Process: In 1983, Governor Kerrey appointed the Task Force on Excellence in Education, which held a series of public meetings across Nebraska to determine the status of education and its improvement. Presented in September 1983, the Task Force's recommendations formed the basis for a package of reforms passed by the Nebraska Legislature as the Comprehensive Education Act in April 1984. The Comprehensive Education Act stipulated a graduation requirement for the core curriculum areas, required the Nebraska State Board of Education to establish a core curriculum standard, pilot a performance-based system of accreditation, and establish a program for disseminating effective curricula. Advisory committees, consisting of representatives from school districts, community groups, parents, business and industry, and higher education, were appointed to oversee the development of curriculum frameworks. Subject-based task forces, consisting of educators and community members from school districts developed the Nebraska Curriculum Frameworks by reviewing national standards, standards' documents from other states, and local school district curriculum guides. Afterwards, standards were extracted from the Nebraska Curriculum Frameworks by a panel of experts, and reviewed by educators, parents, community representatives, and students at public meetings held across Nebraska. In January 1997, the State Board contracted Public Agenda Foundation to conduct eight focus group sessions, which led to six public hearings held across Nebraska on the proposed Nebraska Standards and their implementation, and an open listening session conducted by the State Board in May 1997. The State Board adopted the Nebraska Standards for Mathematics and Reading-Writing in February 1998, and Social Studies-History and Science in May 1998.

Implementation Process: Beginning in April 1998, the State Board developed and adopted a staff development policy, the Nebraska Framework for School Improvement, to assist teachers implement the Nebraska Standards. Implemented in 1999, the Nebraska Framework for School Improvement involved schools developing five-year school improvement plans supported by periodic reviews by external teams. The Nebraska Standards or local standards were implemented through a four-phase school improvement process: gaining awareness of standards-based education; aligning the curriculum review cycle to the standards; developing a local assessment plan; and complying with state accountability requirements. The Nebraska Educational Service Units collaborated on the SLATE Project to provide a searchable collection of web sites offering lesson plans, supplemented by evaluations of their alignment to the Nebraska Standards.

Revision Process: The State Board adopted revised Nebraska Standards for Reading-Writing in September 2001 and Social Studies-History in September 2003. The Nebraska Curriculum Frameworks are reviewed regularly and revised to reflect changes in particular disciplines. School districts are required to employ a curriculum review cycle.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: Teachers are expected to use textbooks as the basis for making content decisions in the initial stage of aligning teaching and learning to the Nebraska Standards or local standards.

Nevada

Title of State Standards: Nevada Academic Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1997, 75%, C; 1998, 82%, B-; 1999, 86%, B; 2000, 90%, A-; 2001, 80%, B-; 2002, 80%, B-, revision: yes; 2003, 80%, B-, revision: yes; 2004, 80%, B-, revision: yes; FF - 1998, not available; 2000, C+

Components: The Nevada Academic Standards present content and performance standards. The Nevada Curriculum Frameworks provide guidelines for school districts in planning, implementing, supporting and evaluating programs.

Subjects: Arts; Computer and Technology Education; English Language Arts; Foreign Language; Health; Mathematics; Physical Education; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1997, the Nevada Legislature passed the Nevada Education Reform Act, which created the nine-member Nevada Council to Establish Academic Standards for Public Schools, charged with developing standards over two rounds. Writing teams, consisting of teachers, administrators, curriculum specialists, parents, community members and representatives from business, industry, higher education and local school boards, assigned by the Council to each subject, reviewed standards from Nevada and other states in approaching their work, which fell into two phases. First, they developed exit standards, and grade-level standards for grades 2, 3, 5, 8 and high school. Second, they developed indicators of progress for the remaining grades, that is, kindergarten and grades 1, 4, 6 and 7. The Nevada State Board of Education adopted Nevada Academic Standards for English Language Arts, Mathematics and Science in the first round in September 1998, and the Arts, Computer and Technology Education, Health, Physical Education and Social Studies in the second round in September 1999. Nevada Academic Standards for Foreign Language, originally completed in July 1997, were revised and adopted by the State Board in December 1999.

Implementation Process: The Nevada Department of Education developed a multi-media presentation on Standards-based Reform in Nevada for use by Department of Education staff. The Department of Education conducts curriculum and assessment workshops for school districts.

Revision Process: The Council collects responses on the Internet from citizens for the purpose of making changes to the Nevada Academic Standards. The Nevada Curriculum Frameworks are revised periodically.

Degree of State Control over Materials' Adoption: The State Board adopts the state list of a multiple number of approved materials in each subject for a four-year cycle.

Degree of Local Control over Materials' Adoption: Local school district committees participate in textbook evaluation projects to recommend materials to the State Board. Local school district committees select materials from the state adoption list, which are adopted by local school boards.

Strategies Relating to Materials: The Nevada English Language Arts Standards include a suggested reading list developed by the International Reading Association. The State Board adopts only materials that adequately support the Nevada Academic Standards.

New Hampshire

Title of State Standards: New Hampshire Curriculum Frameworks

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 92%, A-; 1998, 89%, B+; 1999, 85%, B; 2000, 87%, B+; 2001, 76%, C; 2002, 73%, C, revision: no; 2003, 76%, C, revision: no; 2004, 70%, C-, revision: no; FF - 1998, C-; 2000, C-

Components: The New Hampshire Curriculum Frameworks organise curriculum and proficiency standards by strands. The Addenda, which present additional proficiency standards, teaching thoughts and episodes, assessment techniques, and lists of resources, are intended to support and elaborate the New Hampshire Curriculum Frameworks.

Subjects: Arts; Career Development; English Language Arts; Mathematics; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1989, the New Hampshire State Board of Education adopted the goal of developing an educational improvement and assessment program. In 1991, the 27-member Steering Committee submitted a detailed plan for developing curriculum frameworks and a state assessment program to the New Hampshire Legislature, which established the New Hampshire Educational Improvement and Assessment Program in 1993. Developed by committees consisting of educators, parents, business people and community members, New Hampshire Curriculum Frameworks were adopted by the State Board in the core subjects in 1995, Career Development in December 1999, and the Arts in April 2001. Writing groups from the New Hampshire Statewide Action Team developed nine addenda for K to 3, 4 to 6 and 7 to 10 Mathematics, K to 6 and 7 to 10 Science, K to 6 and 7 to 12 English Language Arts, and 7 to 10 Social Studies.

Implementation Process: The New Hampshire Curriculum Frameworks for the core subjects were disseminated to all schools during 1996. Schools were assisted in developing

local improvement plans to implement the New Hampshire Curriculum Frameworks. In 1999, the New Hampshire Department of Education and New Hampshire teachers collaborated to design a web site, New Hampshire Educators Online, to provide lesson plans linked to the New Hampshire Curriculum Frameworks, professional development resources, and links to projects initiated by New Hampshire educators.

Revision Process: Constituted to revise the Social Studies framework, the Social Studies Framework Revision Committee released a revised draft for a month-long public review in August 2004.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The K to 3 Mathematics Addendum contains a list of materials.

New Jersey

Title of State Standards: New Jersey Core Curriculum Content Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: yes (English, Mathematics, Science, Social Studies); EPE - 1997, 99%, A; 1998, 87%, B+; 1999, 80%, B-; 2000, 80%, B-; 2001, 68%, D+; 2002, 76%, C, revision: yes; 2003, 77%, C+, revision: yes; 2004, 81%, B-, revision: yes; FF - 1998, D+; 2000, D+

Components: The New Jersey Core Curriculum Content Standards organise cumulative progress indicators by strands. The New Jersey Curriculum Frameworks, which organise cumulative progress indicators and activities by core curriculum content standards, are designed to assist school districts develop curricula based on the core curriculum content standards.

Subjects: Career Education and Consumer, Family and Life Skills; Comprehensive Health and Physical Education; Language Arts Literacy; Mathematics; Science; Social Studies; Technological Literacy; Visual and Performing Arts; and World Languages.

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: Following recommendation by the Statewide High School Proficiencies Panel, the New Jersey State Board of Education adopted a plan to develop core course proficiencies in eight content areas in 1989. During 1992 and 1993, panels of educators, business people and citizens developed preliminary drafts in the seven subjects, and career education. In 1995, the State Board adopted the Strategic Plan for Systemic Improvement of Education ensuring development of rigorous academic standards. During 1995, similarly constituted working groups built on this preliminary work, and consulted the public through a statewide review. The working groups submitted 85 standards to the New Jersey Department of Education, which reduced these to 56 standards across the seven subjects. Five cross-curricular workplace readiness standards, applying to all subjects,

were also defined to elevate the importance of career education across the curriculum. The State Board adopted the New Jersey Core Curriculum Content Standards in May 1996. The curriculum frameworks were developed by task forces of 40 to 50 educators, each comprising of a leadership team responsible for overseeing the design of the framework and the identification of the subject matter, a writing team, a review team, and one or more teams representing minority populations. The task forces were assisted by three organisations commissioned in June 1996 for Mathematics, Science, and Language Arts Literacy, and three organisations commissioned in March 1997 for Visual and Performing Arts, Comprehensive Health and Physical Education, and Social Studies. Copies of each draft framework were distributed to educators across New Jersey for review, and subsequently revised. The State Board adopted curriculum frameworks for Mathematics in January 1997, Language Arts Literacy and Science in November 1998, Visual and Performing Arts in November 1998, and Social Studies and Comprehensive Health Education and Physical Education in July 1999. The State Board adopted curriculum frameworks for World Languages in January 1999 and Cross-Content Workplace Readiness in 2001.

Implementation Process: In November 1997, Governor Christine Whitman convened the New Jersey Education Summit at which teachers, business people and government personnel representing 20 school districts undertook a planning exercise to refine each district's plan for implementing the New Jersey Core Curriculum Content Standards. In April 1998, the State Board proposed the Standards and Assessment for Student Achievement Code, requiring all publicly funded education providers to align their curricula to the New Jersey Core Curriculum Content Standards. Following review of the code at six regional testimonial sessions held in 1998, it was substantially revised before being reviewed by the State Board in the winter of 1999. The revised code was subsequently presented for public review during the spring of 1999, before being revised again and adopted by the State Board in April 2000. Founded in 1997, 21 educational technology training centres provided professional development for implementing the New Jersey Core Curriculum Content Standards. In July 1997, the New Jersey Mathematics Coalition initiated the three-year project, Families Achieving the New Standards (FANS), intended to inform parents about the New Jersey Core Curriculum Content Standards in Mathematics, Science and Technology. More than 30,000 parents, who attended 1,400 workshops run by more than 1,000 trained volunteer leaders across New Jersey, viewed a video, participated in hands-on activities, and received copies of the FANS Family Kit. A second project, Gaining Achievement in the New Standards, was designed during 2000. The Department of Education collaborated with Rutgers University and Fairleigh Dickenson University to develop videotapes, parent workshop prototypes, and print materials to inform parents about the New Jersey Core Curriculum Content Standards in Language Arts Literacy and World Languages.

Revision Process: The Standards and Assessment for Student Achievement Code requires the New Jersey Core Curriculum Content Standards to be reviewed every five years and, if necessary, to be further refined. In May 2001, the Department of Education appointed the Standards Revision Advisory Committee to oversee the work of seven subject-based standards review panels in developing revised drafts. Following their completion in November 2001, the State Board in collaboration with New Jersey United for Higher School Standards presented the drafts for public review at revision feedback sessions held across New Jersey in February and March of 2002. The State Board adopted revised New Jersey Core Curriculum Content Standards for Language Arts Literacy, Mathematics and Science in July 2002. The State Board adopted revised New Jersey Core Curriculum Content Standards for Career Education and Consumer, Family and Life Skills, Comprehensive Health and Physical Education, Technological Literacy, Visual and Performing Arts, and World Languages in April 2004. The State Board adopted revised New Jersey Core Curriculum Content Standards for Social Studies in October 2004.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The Comprehensive Health Education and Physical Education, Science and World Languages frameworks present sets of criteria for selecting materials. Lists of suggested materials are presented in the Comprehensive Health Education and Physical Education, Language Arts Literacy and Social Studies frameworks.

New Mexico

Title of State Standards: New Mexico Content Standards and Benchmarks

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: yes (English); EPE - 1997, 98%, A; 1998, 89%, B+; 1999, 94%, A; 2000, 100%, A; 2001, 91%, A-; 2002, 83%, B, revision: yes; 2003, 85%, B, revision: yes; 2004, 83%, B, revision: yes; FF - 1998, F; 2000, F

Components: The New Mexico Content Standards and Benchmarks present content standards with benchmarks, and performance standards.

Subjects: Arts; Career Readiness; Health Education; Language Arts; Mathematics; Modern, Classical and Native Languages; Physical Education; Science; and Social Studies

Grade Ranges: K to 4; 5 to 8; and 9 to 12

Developmental Process: In November 1987, the New Mexico State Board of Education adopted the Consolidating Initiatives for Tomorrow's Education plan, which included appointing task forces to identify essential competencies in nine subjects. Developed by the task forces, the competency frameworks were adopted by the State Board in 1992. Subsequently, groups of educators, parents, and business and community members used the competency frameworks to develop the New Mexico Content Standards and

Benchmarks, which were adopted by the State Board in 1997. At a later stage, subject-based committees developed performance standards, which were revised and approved by the State Board in 1998 following public hearings and focus groups across New Mexico. In 1996, the State Board amended the three-tiered Standards for Excellence, originally adopted in 1991. Presenting broad expectations for successful students, expectations for district-level educational plans for student success, and content expectations outlined in the New Mexico Content Standards and Benchmarks, the amended Standards for Excellence were revised by the State Board's Educational Standards Commission before approval in October 1999. In 2003, the New Mexico Legislature passed legislation requiring the New Mexico Public Education Department to develop a New Mexico History Resource Framework to support implementation of the New Mexico Content Standards and Benchmarks for Social Studies.

Implementation Process: In August 1997, the New Mexico Department of Education disseminated a guide, *Ideas: Instructional Strategies for Implementing Content Standards and Benchmarks*, to assist school districts implement the New Mexico Content Standards and Benchmarks through a six-stage process of curriculum alignment. First, the curriculum is reviewed. Second, the New Mexico Content Standards and Benchmarks are linked to local academic, cultural and linguistic expectations. Third, the curriculum is aligned to district approved standards and benchmarks. Fourth, appropriate assessments and tests are selected or developed. Fifth, orientation and professional development are provided. Sixth, a monitoring and feedback system is established to ensure the alignment plan works. A three-year, statewide plan of professional development to implement the New Mexico Content Standards and Benchmarks was launched in August 1999. In 2003, the Public Education Department designed myStandards, an on-line tool for teachers to create and share units and lesson plans aligned to the New Mexico Content Standards and Benchmarks.

Revision Process: The New Mexico Content Standards and Benchmarks in applicable subjects are reviewed two years prior to the date when materials are adopted within the six-year cycle to determine appropriate standards and curricula. The State Board adopted revised New Mexico Content Standards and Benchmarks for Science in October 1999, Language Arts in June 2000, Social Studies in June 2001, Mathematics in June 2002, and Science in August 2003.

Degree of State Control over Materials' Adoption: Reviewers advise the Instructional Material Commission about the selection of a multiple number of approved materials in each subject for the state list adopted by the State Board for a six-year cycle. The state-level adoption process includes a public hearing by the State Board following public reviews through displays at nine regional review centres, and publishers' caravans.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards.

Strategies Relating to Materials: The New Mexico Content Standards and Benchmarks revision cycle, the state-level materials adoption cycle, and local curriculum cycles are sequenced. In March 2000, the State Board approved the requirement for publishers to provide correlations for submitted basal materials and educational media, indicating their alignment with the New Mexico Content Standards and Benchmarks. The Department of Education maintains a searchable database of state-adopted materials on its web site. The Albuquerque Book Depository offers an ordering system for New Mexico schools on its web site. The Southwest Textbook Depository offers an ordering system for New Mexico schools on its web site. MyStandards contains teacher-developed lesson plans.

New York

Title of State Standards: Learning Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: yes (English, Mathematics, Science, Social Studies); EPE - 1997, 100%, A; 1998, 92%, A-; 1999, 95%, A; 2000, 96%, A; 2001, 94%, A; 2002, 97%, A, revision: yes; 2003, 97%, A, revision: no; 2004, 97%, A, revision: no; FF - 1998, D+; 2000, C-

Components: A New Compact of Learning provides a rationale for educational reform. The Curriculum Frameworks contain Learning Standards, which organise key ideas and performance indicators or checkpoints, and present samples of student work. The Resource Guides, consisting of indicators, examples of evidence of achievement, samples of integrated learning experiences, implementation strategies and suggested resources, present resources for planning, implementation, support and assessment.

Subjects: Arts; Career Development and Occupational Studies; English Language Arts; Health, Physical Education, Family and Consumer Sciences; Languages other than English; Mathematics, Science and Technology; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In March 1991, the New York State Board of Regents adopted A New Compact of Learning. It provided a vision for systemic reform based on six principles: all children can learn; a focus on results; aim for mastery; provide the means; provide authority with accountability; and reward success and remedy failure. Appointed in September 1991 by the Board of Regents to develop a plan for curriculum reform based on A New Compact of Learning, the 28-member New York State Curriculum and Assessment Council issued an interim report in October 1992. It outlined a vision for a learning-centred curriculum, and recommended that content and performance standards be defined and set out in curriculum frameworks. In response to public comments to the interim report requesting that implementation of the vision be defined in greater detail, the Council released a discussion document in 1994 outlining a strategy for developing a set of new curriculum frameworks and a revised assessment system. Following a series of meetings across New York at which public comments were gathered on the proposed

strategy, the New York State Education Department released an overall strategy in the autumn of 1995. It called for setting high learning standards and revising the assessment system, building the capacity of schools to support student learning, and developing an accountability system. In consequence, the Board of Regents appointed curriculum and assessment committees to develop curriculum frameworks for seven subjects. The preliminary drafts were presented for public and expert reviews in 1994 and 1995, revised on the basis of responses, and adopted by the Board of Regents between March and July of 1996. Subsequently, working groups, consisting of teachers, and staff of the State Education Department and institutions of higher education, developed the resource guides. The Early Elementary Resource Guide was released in December 1996. The English Language Arts Resource Guide was released in January 1997. The Arts Resource Guide was released in February 1997. The Mathematics, Science and Technology Resource Guide was released in March 1997. The Health, Physical Education, Family and Consumer Sciences, and Languages other than English resource guides were released in June 1997. The Career Development and Occupational Studies, Social Studies, and Adult Education resource guides were released in September 1997.

Implementation Process: The curriculum frameworks and resource guides were disseminated for implementation from 1997. The State Education Department established the New York State Systemic Initiative providing resources related to the Learning Standards for Mathematics, Science and Technology. Local capacity to implement the curriculum frameworks and the state assessment system was extended through the Board of Regents' proposals to focus resources, extend time for in-service training of staff in critical areas, and provide funds to improve school facilities. A coordinated plan for delivery of professional development services through a range of providers was introduced. These services were offered by more than 40 providers, including the Staff and Curriculum Development Network, teachers centres, professional associations, as well as bilingual education technical assistance centres, special education training and resource centres and comprehensive school health and wellness centres based in 38 boards of cooperative educational services. Twelve regional information centres, computer centres operated by consortia of boards of cooperative educational services, provided consultation and technical assistance, development of resources and professional development related to the implementation of the Learning Standards. Teleconferences were used to disseminate information to a wider audience. The *Directory of Innovative Scheduling Practices* identifying schools, which have implemented innovative practices, was published. In November 2000, the Board of Regents and the State Education Department held a Statewide Forum on Standards Implementation involving three panels of practitioners and policy experts.

Revision Process: Both the curriculum frameworks and resource guides are designed to be dynamic, and undergo continuous development on the Internet. The Learning Standards in the curriculum frameworks are revised on the basis of improving educational practices.

Appointed in June 2003, the Independent Panel on Math A recommended in October 2003 that the mathematics standards should be revised. Formed in December 2003, the Mathematics Standards Committee considered relevant research and other standards in proposing modifications to the mathematics standards to improve their clarity, specificity and functionality. The Mathematics Standards Committee presented its proposals to the Board of Regents in November 2004. The State Education Department collects and publishes new samples of student work in successive editions of the curriculum frameworks. Teachers are invited to submit learning experiences, which have worked well in their classrooms, for inclusion in future editions of the resource guides. Established in 1997 with membership drawn from teachers who have submitted classroom curricular materials to the resource guides, the New York State Academy for Teaching and Learning maintains a web site presenting peer-reviewed, learning experiences. Developed by consultants from the Annenberg Institute for School Reform in 1996, the peer review process involves teachers submitting learning experiences, and meeting with peer reviewers annually in March to assess the learning experiences.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The resource guides and the New York State Academy for Teaching and Learning's web site contain teacher-developed learning experiences, each consisting of a learning context, procedure, instructional and environmental modifications, time required, resources, assessment plan, student work, and reflection. The English Language Arts Resource Guide with Core Curriculum contains a guide for selecting materials, and a list of literary titles selected by teachers across New York. Founded in 1967, the Educational Products Information Exchange Institute at Hampton Bays updates and disseminates The Educational Software Selector, a searchable database of 19,000 records of reviews on computer software from 1,300 publishers originally evaluated by a network of trained teachers between 1984 and 1989. The Educational Software Selector is available to subscribers on a CD-ROM, as well as to members of the States Consortium for Improving Software Selection on the Internet. Founded in 1989, the American Textbook Council based in New York City reviews history textbooks, monitors state and local adoptions of history textbooks, and conducts research into the role of history textbooks.

North Carolina

Title of State Standards: North Carolina Standard Course of Study

Standards Grades: AFT - 1995, no; 1996, no; 1997, yes; 1998, no; 1999, yes; 2001, standards: yes, curriculum: yes (English, Mathematics, Science); EPE - 1997, 100%, A; 1998, 93%, A; 1999, 89%, B+; 2000, 95%, A; 2001, 87%, B+; 2002, 83%, B, revision: yes; 2003, 81%, B-, revision: yes; 2004, 84%, B, revision: yes; FF - 1998, C; 2000, B-

Components: The North Carolina Standard Course of Study organises competency goals and objectives by strands. The Teacher Handbooks reiterate goals and objectives from the North Carolina Standard Course of Study, and provide additional information to assist teachers in curriculum planning.

Subjects: Arts Education; Computer Technology Skills; English Language Arts; English Language Development; Guidance; Healthful Living Education; Information Skills; Mathematics; Science; Second Language Studies; Social Studies; and Workforce Development Education

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In June 1984, the North Carolina General Assembly passed the Elementary and Secondary School Reform Act, which funded the Basic Education Program, an improvement effort intended to establish a common core of knowledge, general standards, material support and staffing for North Carolina's public schools. The North Carolina State Board of Education was directed to revise the North Carolina Standard Course of Study, which was accomplished in 1985. North Carolina Department of Public Instruction and regional staff reviewed and synthesised the reports of curriculum review committees, and educators from school districts and institutions of higher education expanded and refined a new North Carolina Standard Course of Study and the North Carolina Competency-Based Curriculum. Appointed in 1997, the 13-member Committee on Standards and Accountability developed performance standards, which were incorporated into the North Carolina Standard Course of Study.

Implementation Process: Nine regional education service alliances conduct staff development activities to support implementation of the revised subjects. The University of North Carolina at Chapel Hill worked with coordinators in local school districts to provide a web site, LEARN NC. LEARN NC presents articles on educational practices and professional development, multimedia explorations of educational practices, lesson plans, links to web sites offering professional development, on-line courses, and support for new teachers.

Revision Process: Undertaken on a rotation schedule over a five-year cycle, revision of the subjects in the North Carolina Standard Course of Study is conducted by advisory committees. In 1994, the Department of Public Instruction adopted a model for evaluating programs and curricula consisting of five, one-year phases. In the first year, surveys are developed, goals reviewed, and data collected and analysed. In the second year, drafts are developed, reviewed and revised on four occasions before approval by the State Board. In the third year, staff development is provided. In the fourth year, the changes are implemented. In the fifth year, the changes are monitored, and revisions made. Science and Second Language Studies were revised in 1994. Guidance was revised in 1995. Arts Education and Healthful Living Education were revised in 1996. English Language Arts, Social Studies, and Workforce Development Education were revised in 1997. Computer

Technology Skills was revised in 1998. English Language Arts, Information Skills, Mathematics and Second Language Studies were revised in 1999. Arts Education, Healthful Living Education, and Science were revised in 2000. Guidance and Social Studies were revised in 2001. Computer Technology Skills and Workforce Development Education were revised in 2002. English Language Development was developed, and Mathematics was revised in 2003. Science was revised in 2004.

Degree of State Control over Materials' Adoption: Regional textbook evaluation advisory committees advise the Textbook Commission about the selection of a multiple number of approved materials in each subject for the state list adopted by the State Board for a five-year adoption cycle. The state-level adoption process includes regional presentations of adopted materials.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. Each local school board may adopt materials that have not been adopted by the State Board for use throughout the local school district.

Strategies Relating to Materials: The State Board implemented an on-going process for aligning the content standards in the core areas with the North Carolina Standard Course of Study, criteria for selecting materials, support materials, state tests, professional development, and school administrator preparation. The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. In collaboration with the Southern Regional Education Board's Educational Technology Cooperative, the Department of Public Instruction provides, EvalUTech, a searchable database of books, audiovisual materials, computer courseware, CD-ROMs, videodiscs and educational web sites. LEARN NC contains teacher-developed lesson plans.

North Dakota

Title of State Standards: North Dakota Content Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 78%, C+; 1998, 65%, D; 1999, 52%, F; 2000, 67%, D+; 2001, 50%, F; 2002, 63%, D, revision: yes; 2003, 59%, F, revision: yes; 2004, 70%, C-, revision: yes; FF - 1998, F; 2000, F

Components: The North Dakota Content Standards, which present benchmarks together with examples of specific knowledge and performance activities, provide model standards from which local standards are developed.

Subjects: Arts; English Language Arts; Foreign Language; Health; Library Technology Literacy; Mathematics; Physical Education; Science; and Social Studies

Grade Ranges: K to 4; 5 to 8; and 9 to 12

Developmental Process: In 1991, the North Dakota Department of Public Instruction appointed the Council on Performance Standards and Assessment, which identified six

graduation expectations essential for success in academic, work and social life. In 1993, the Department of Public Instruction developed content standards for Arts Education, Business Education, Foreign Language, Health, Language Arts, Library Media, Mathematics, Physical Education, Science, and Social Studies. Beginning in 1997, teams of educators working with representatives from McREL used these standards, together with the national standards and standards from other states, to develop the North Dakota Content Standards. North Dakota Content Standards, together with performance standards, were published in the English Language Arts Framework in 1996, for Mathematics in 1999, the Arts (Dance, Drama, Music, Visual Arts), Health, Physical Education, and Social Studies in 2000, Science, and Foreign Language in 2001, and Library Technology Literacy in 2002.

Implementation Process: Following distribution of the English Language Arts Framework in April 1996, the Department of Public Instruction provided professional development for teachers through summer institutes and on-site school consultations. The Department of Public Instruction encouraged school districts to include professional development activities within their district professional development plans to integrate the North Dakota Content Standards into the curriculum development process. From 2000, the North Dakota State University at Fargo offered the North Dakota Curriculum Initiative, a professional development program to support administrators and teachers in developing and implementing standards-based curricula. From 2002, the Standards Awareness Team, consisting of educators who had participated in writing the state standards, provided technical assistance to schools. In collaboration with McREL, the Department of Public Instruction, North Dakota teachers and higher education faculty developed the North Dakota Task Bank consisting of a searchable database of lesson plans aligned to the North Dakota Content Standards. In 2000, the North Dakota Teacher Center Network, the Center for Innovation in Instruction, and MCI WorldCom Foundation collaborated to link lesson plans in WorldCom's MarcoPolo database to the North Dakota Content Standards.

Revision Process: Revision of the North Dakota Content Standards is undertaken alternately over a six-year cycle. In 1998, the Department of Public Instruction adopted a protocol requiring the Standards, Assessment, Learning and Teaching Team to appoint writing teams of teachers to revise and implement the standards over six phases. The first and second drafts are developed during the first year. The second draft is reviewed, revised and submitted to the Standards, Assessment, Learning and Teaching Team for approval during the second year. Professional development is provided for teachers and administrators, the standards are implemented, and implementation is evaluated in preparation for the next cycle during years 3 to 6. In 2003, writing teams were appointed to revise the North Dakota Content Standards for English Language Arts and Mathematics. The final drafts were presented to the Department of Public Instruction in February 2004. Following incorporation of achievement standards, the revised North Dakota Content and

Achievement Standards for English Language Arts and Mathematics were released in August 2004.

Degree of State Control over Materials' Adoption: North Dakota textbook law requires textbook publishing companies to be approved and bonded to the Department of Public Instruction to sell textbooks to North Dakota schools.

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: No strategies were identified.

Ohio

Title of State Standards: Ohio Academic Content Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: no, curriculum: no; EPE - 1997, 92%, A-; 1998, 91%, A-; 1999, 86%, B; 2000, 87%, B+; 2001, 83%, B; 2002, 72%, C-, revision: yes; 2003, 82%, B-, revision: yes; 2004, 95%, A, revision: yes; FF - 1998, C-; 2000, C

Components: The Ohio Academic Content Standards organise standards, benchmarks and indicators by strands. The Model Curricula, which present lesson plans and assessment items, provide models for developing lessons and assessments.

Subjects: Arts; English Language Arts; Foreign Languages; Mathematics; Science; Social Studies; and Technology

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1983, the Ohio State Board of Education adopted the Minimum Standards for Elementary and Secondary Schools requiring competency-based education in English composition, mathematics and reading. In 1989, the Ohio Senate passed a law requiring school districts to develop competency-based programs in mathematics, reading and writing, and the State Board to develop model competency-based programs for each of these subjects. Following authorisation from the Ohio General Assembly, the State Board directed the Ohio Department of Education to develop model competency-based programs in each subject in March 1994. Advisory and staff support committees and writing subcommittees, appointed to each subject, developed successive drafts for the model competency-based programs by referring to the national standards. The drafts were presented to national experts, as well as educators and the public for reviews across Ohio, before being revised on the basis of responses. The State Board adopted model programs for Mathematics in 1990, Language Arts in 1992, Science and Social Studies in 1994, and Comprehensive Arts Education, Foreign Languages, and Health and Physical Education in 1996. In August 1998, the Joint Council of the State Board and the Ohio Board of Regents appointed writing teams, which developed common expectations for high school graduation in the Arts, English Language Arts, Foreign Languages, Mathematics, Science, and Social Studies. In January 2000, Governor Robert Taft appointed the 33-member

Governor's Commission for Student Success, which examined the academic expectations and assessments needed to ensure success for Ohio students by meeting with experts, convening public hearings, and conducting a poll of Ohio residents. The passage of Senate Bill 1 in June 2001, which enacted the recommendations of the Commission presented in December 2000, required rigorous academic standards, model curriculum frameworks, new assessments, and a revised accountability system based on work commenced by the Joint Council to be developed. In response to a request from the Commission, the Department of Education appointed writing teams to transform the common expectations into academic content standards over three rounds. On the basis of responses from consultations with the educational community, the writing teams revised the drafts, which were then reviewed by representatives of professional associations and teachers at regional meetings across Ohio. Following further revisions, the State Board adopted Ohio Academic Content Standards in the first round for English Language Arts and Mathematics in December 2001, the second round for Science and Social Studies in December 2002, and the third round for the Arts, Foreign Languages and Technology in December 2003. Developed by teams of educators and subject experts and pilot-tested by more than 1,000 teachers over 18 months, model curricula for English Language Arts and Mathematics were adopted by the State Board in June 2003.

Implementation Process: Although the Ohio Legislature passed the Ohio Revised Code in 1989 requiring school districts to develop competency-based programs, which compared satisfactorily with the Model Competency-Based Programs, this requirement was removed in 1994. During the developmental phase, the Department of Education conducted regional meetings to help school districts prepare to align their curricula to the Ohio Academic Content Standards. In May 2001, the Department of Education disseminated a toolkit providing information to familiarise teachers with the Ohio Academic Content Standards. The Department of Education applied a train-the-trainer model through the Teachers-On-Loan Program to train a designated teacher in each region to support other teachers implement the Ohio Academic Content Standards. The Department of Education also trained parents through parent academies as parent trainers, and developed parent and student guides on the Ohio Academic Content Standards. The Ohio Resource Center for Mathematics, Science and Reading based at Ohio State University maintains a searchable database of lesson plans and units for mathematics, science and reading aligned to the Ohio Academic Content Standards.

Revision Process: No process has been determined for revising the Ohio Academic Content Standards. The model curricula are designed to be dynamic, and undergo continuous development on the Internet.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The Model Competency-Based Language Arts Program presents guidelines for selecting supplementary reading materials, and a suggested reading list. Ohio's Model Competency-Based Science Program presents a position paper on the selection of materials, a set of criteria for selecting mathematics and science materials, and a list of recommended types of science materials and equipment. *A Resource Guide to Accompany Social Studies: Ohio's Model Competency-Based Program*, published in 1996, containing lists of materials for social studies, was developed following a survey of publishers.

Oklahoma

Title of State Standards: Priority Academic Student Skills

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 89%, B+; 1998, 90%, A-; 1999, 70%, C-; 2000, 91%, A-; 2001, 83%, B; 2002, 83%, B-, revision: yes; 2003, 89%, B+, revision: yes; 2004, 89%, B+, revision: yes; FF - 1998, D-; 2000, C-

Components: The Priority Academic Student Skills, which present content standards, provide a core curriculum for school districts.

Subjects: Arts; Language Arts; Languages; Mathematics; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1982, the Oklahoma General Assembly passed a law requiring each local board of education to develop a process for evaluating the district's curriculum to determine whether basic skills were adequate in each subject. With the assistance of educators, the Oklahoma Department of Education developed learner outcomes in each subject. In February 1991, the Oklahoma State Board of Education adopted common curriculum standards requiring all school districts to ensure attainment of desired levels of competencies in the core curriculum. As a consequence, more than 800 Department of Education staff, educators from school districts and institutions of higher education, parents and community members developed the draft for the Priority Academic Student Skills. The draft was presented for public review by more than 1,000 citizens meeting at sessions held at six venues across Oklahoma in August 1993. The draft was revised on the basis of responses before presentation to the State Board, which adopted the Priority Academic Student Skills in September 1993.

Implementation Process: The Priority Academic Student Skills were distributed to all teachers in the autumn of 1993 for implementation during the 1993-1994 school year. Each summer, Department of Education curriculum specialists conduct core curriculum regionals providing professional development to assist teachers implement the Priority Academic Student Skills.

Revision Process: The State Board reviews the Priority Academic Student Skills every three years, revising the curriculum as deemed necessary. Curriculum committees are appointed

to revise and trial each subject. The State Board adopted the first revision of the Priority Academic Student Skills in March 1997, the second revision in July 1999, and the third revision in August 2002.

Degree of State Control over Materials' Adoption: Reviewers advise the State Textbook Committee about the selection of a prescribed number of approved materials in each subject for the state list adopted by the State Textbook Committee for a six-year cycle. The state-level adoption process includes State Textbook Committee hearings with publishers and the public following public reviews through displays at ten district review centres, and publishers' caravans.

Degree of Local Control over Materials' Adoption: School district committees select materials from the state adoption list, which are adopted by local school boards. Citizens and publishers may petition the State Textbook Committee to adopt non-adopted materials that are innovative.

Strategies Relating to Materials: The Oklahoma Textbook Depository provides a catalogue of state-adopted materials on its web site.

Oregon

Title of State Standards: Oregon Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: yes (English); EPE - 1997, 91%, A-; 1998, 87%, B+; 1999, 91%, A-; 2000, 94%, A; 2001, 86%, B; 2002, 86%, B, revision: yes; 2003, 84%, B, revision: yes; 2004, 82%, B-, revision: yes; FF - 1998, D; 2000, D+

Components: The Oregon Standards present common curriculum goals, content standards and benchmarks.

Subjects: Arts; English Language Arts; Mathematics; Physical Education; Science; Second Languages; and Social Sciences

Grade Ranges: 3; 5; 8; 10; and 12

Developmental Process: In 1991, the Oregon Legislature passed the Oregon Educational Act for the Twenty-First Century, which required school councils to encourage local decision-making, and created Certificates of Initial and Advanced Mastery for accrediting students achieving high standards. In 1992, ten task forces consisting of 200 educators, parents, business people, and community members presented recommendations to the Oregon State Board of Education for implementing the Act. In 1993, the State Board presented a plan based on these recommendations to the Oregon Legislature. In 1994, school districts developed district improvement plans to reach the goals specified in the Act. In 1995, the Oregon Legislature amended the Act, requiring the State Board to adopt content standards in the core subjects. Beginning in 1995, Oregon Department of Education staff developed the content standards and revised the common curriculum goals. A team of nationally recognised curriculum experts reviewed the content standards in June 1996, whilst more

than 1,500 business people, educators and citizens reviewed the draft standards at public hearings held across Oregon in August 1996. The State Board adopted Oregon Standards for the Certificate of Initial Mastery in September 1996 and for the Certificate of Advanced Mastery in December 1996. In the spring of 1997, the Department of Education and the Oregon University System aligned the Oregon Standards to the Proficiency-based Admissions Standards System. Following review by a panel of national experts and parent representatives, the aligned content standards were revised at regional review sessions before being adopted by the State Board in March 1998.

Implementation Process: Disseminated in January 1997, the Oregon Standards were implemented in the 2002-2003 school year to meet requirements for the statewide testing program. In 1997, the Department of Education disseminated a two-part series, the first part an introductory packet and the second part a training material, designed to assist teachers implement the Oregon Standards. The aligned content standards were disseminated to schools in April 1998 for implementation in September 1998. Beginning in 1999, the Department of Education disseminated an annually updated series, *Teaching and Learning to Standards*, to provide guidance to teachers on standards, curriculum and instruction, assessment and resources. Founded in 1995, the Oregon Public Education Network, a project sponsored by the Oregon Association of Education Service Districts, established a web site in March 1997 containing a searchable database of content standards.

Revision Process: The Oregon Standards are reviewed and revised over a two-year cycle. A team of curriculum, assessment and technical education specialists collected feedback for the first revisions in 1997. In November 1997, the Department of Education presented the draft revisions to educators across Oregon for review, and submitted them to the State Board for approval in February 1998. Representing minor modifications, the revisions were incorporated into content standards disseminated to school districts for implementation in the 1998-1999 school year. The State Board adopted second revised standards for Science and Social Science in April 2001, Physical Education in September 2001, Second Languages in March 2002, Mathematics in April 2002, and English Language Arts for grade 3 in June 2002 and grades 4 to 10 in January 2003.

Degree of State Control over Materials' Adoption: Reviewers advise the State Board about the selection of a multiple number of approved materials in each subject for the state list adopted by the State Board for a six-year cycle. The state-level adoption process includes reviewers' hearings with publishers, public hearings by the State Board following public reviews through displays at 11 viewing sites, and publishers' caravans.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. School districts may adopt non-adopted materials that meet State Board selection criteria.

Strategies Relating to Materials: The Northwest Textbook Depository provides a catalogue of state-adopted materials, offers an on-line ordering system for schools in Oregon, Alaska

and Washington, and collaborates with the Mountain State Schoolbook Depository in providing a searchable database of materials.

Pennsylvania

Title of State Standards: Pennsylvania Academic Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: yes (English, Mathematics); EPE - 1997, 88%, B+; 1998, 88%, B+; 1999, 86%, B; 2000, 84%, B; 2001, 63%, D; 2002, 80%, B-, revision: no; 2003, 81%, B-, revision: yes; 2004, 84%, B, revision: yes; FF - 1998, D-; 2000, D+

Components: The Pennsylvania Academic Standards, which organise performance standards by strands, are used to develop local school curricula.

Subjects: Arts and Humanities; Career Education and Work; Environment and Ecology; Family and Consumer Sciences; Health, Safety and Physical Education; Mathematics; Reading, Writing, Speaking and Listening; Science and Technology; Social Studies; and World Languages

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In September 1996, Governor Tom Ridge appointed the 13-member Governor's Advisory Commission on Academic Standards to oversee the development of performance standards. The Commission contracted subject-based committees consisting of Pennsylvania Department of Education staff, school administrators, teachers, higher education faculty, business and community representatives, and parents to develop drafts over six rounds. The Commission then held private working sessions to verify whether the drafts satisfied four criteria; they were rigorous, measurable, applicable to the world in which we live, and clearly written. The Commission then conducted public hearings across Pennsylvania to solicit commentary concerning the proposed standards in the drafts. The Pennsylvania State Board of Education engaged in a process of public review following presentation of the drafts for each round. In January 1999, the State Board amended Title 22 of the Pennsylvania Code by adding a new Chapter 4, which had been developed over an 18-month period to delineate the requirements for academic standards, state assessments, graduation, certification, world language, and strategic planning. After revision of the drafts, the State Board published the Pennsylvania Academic Standards as part of the Chapter 4 regulations. Pennsylvania Academic Standards were published for Mathematics, and Reading, Writing, Speaking and Listening in November 1998, Environment and Ecology, and Science and Technology in January 2002, and Arts and Humanities, Family and Consumer Sciences, Health, Safety and Physical Education, and Social Studies in January 2003.

Implementation Process: Beginning in the summer of 1997, professional development relating to the Pennsylvania Academic Standards was provided to teachers across Pennsylvania through Governor's Institutes for Education. In October 1997, the

Department of Education released a professional development resource kit, *PSSA Classroom Connections*, developed by the Pennsylvania Association of Intermediate Units and more than 100 teachers. A curriculum alignment process, based on the work of Glatthorn (1994), is recommended in *PSSA Classroom Connections* for implementing the Pennsylvania Academic Standards over four phases. First, the district curriculum administrator facilitates planning undertaken by the District Curriculum Planning Council and the Citizens Advisory Council in reviewing the current curriculum. Second, a Subject Area Task Force develops an aligned standards-based curriculum. Third, selected teachers pilot the curriculum, and recommend changes to the Subject Area Task Force for refinement. Fourth, district staff development assists principals and teachers to prepare annual building instructional plans used to implement and monitor the curriculum. Following distribution of 50,000 copies to schools, *PSSA Classroom Connections* was published on a CD-ROM and made available on the Internet in January 1999. Beginning in August 1999, Tuscarora Intermediate Unit 11 offered the Statewide Standards Network providing teachers with professional development relating to the Pennsylvania Academic Standards through videoconferences. In the spring of 2000, the Department of Education and the Pennsylvania Association of Intermediate Units produced a Family Connections Kit to increase parents' knowledge of the Pennsylvania Academic Standards and the Pennsylvania System of School Assessment.

Revision Process: The State Board reviews the Pennsylvania Academic Standards every three years to determine if they are appropriate, clear, specific and challenging, and makes revisions as necessary.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: During the third phase of the curriculum alignment process, pilot teachers identify materials for the local curriculum, which are recommended for selection through the district adoption procedure. In April 1999, the Department of Education published the *Review and Evaluation Instrument for Selecting K-12 Mathematics Programs*, intended to assist schools select appropriate mathematics materials, which support local mathematics programs.

Rhode Island

Title of State Standards: Rhode Island Curriculum Frameworks

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 76%, C; 1998, 83%, B; 1999, 70%, C-; 2000, 70%, C-; 2001, 57%, F; 2002, 68%, D+, revision: no; 2003, 68%, D+, revision: no; 2004, 66%, D, revision: no; FF - 1998, C; 2000, D+

Components: The Common Core of Learning provides a curriculum rationale. The Rhode Island Curriculum Frameworks, which present content standards or benchmarks, are designed to serve as guides for curriculum development by school districts.

Subjects: Arts; English Language Arts; Family and Consumer Sciences; Health Education; Mathematics; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1991, Governor Sundlan appointed the Twenty-First Century Commission, which presented a plan for educational reform in 1992 recommending that student performance standards should be developed. In 1992, the Rhode Island Board of Regents for Elementary and Secondary Education convened the Common Core of Learning Team, comprising of more than 100 parents, educators, business and civic leaders, which designed and administered an instrument to survey the public in June 1994. The results of the survey were distilled into a document presenting a Common Core of Learning based on four goals: communication; problem solving; a body of knowledge; and responsibility. The Common Core of Learning was used as the foundation for developing the Rhode Island Curriculum Frameworks by task forces consisting of teachers, and representatives from business, industry and higher education, appointed in each subject. The task forces referred to the national standards, standards from other states, and the work of other important projects and activities in their disciplines to formulate the drafts, which were then reviewed by subject specialists, and revised on the basis of responses. The Board of Regents adopted curriculum frameworks for Mathematics and Science in October 1995, English Language Arts in June 1996, Health Education in July 1996, Family and Consumer Sciences in January 1997, Arts in April 2001, and the standards-based guide for Social Studies in December 2001. With the advent of the Health Education framework, an Outcomes Revision Committee worked from January to December 1997 to align the Comprehensive Health Instructional Outcomes to the seven Health Education standards by attaching content specific topics to performance descriptions for each standard.

Implementation Process: In 1999, 19 schools formed the Elementary School Standards and Assessment Network to focus on implementing standards-based reforms in English Language Arts and Mathematics. In September 2000, the Rhode Island Department of Elementary and Secondary Education established the Rhode Island Teaching and Learning Center at Coventry to provide professional development in state educational reform initiatives, including standards-based education.

Revision Process: No process has been determined for revising the Rhode Island Curriculum Frameworks.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The Mathematics framework presents guidelines for selecting materials. The standards-based guide for Social Studies contains sample criteria for evaluating social studies materials, and a resource, which includes references to sources for social studies materials. The Department of Elementary and Secondary Education operates the Healthy Schools! Healthy Kids! Resource Center, which offers a web site containing a bibliography of professional and curriculum resources for Health Education.

South Carolina

Title of State Standards: South Carolina Curriculum Standards

Standards Grades: AFT - 1995, yes; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 85%, B; 1998, 79%, C+; 1999, 85%, B; 2000, 84%, B; 2001, 87%, B+; 2002, 87%, B+, revision: yes; 2003, 86%, B, revision: yes; 2004, 93%, A, revision: yes; FF - 1998, D; 2000, B

Components: The South Carolina Curriculum Standards organise content standards by strands. The South Carolina Curriculum Frameworks provide guidelines for school districts to use in developing educational programs.

Subjects: English Language Arts; Foreign Language; Health and Safety Education; Mathematics; Physical Education; Science; Social Studies; and Visual and Performing Arts

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1984, the South Carolina General Assembly passed the Education Improvement Act, enacting a package of reforms intended to raise student academic performance. In 1989, the General Assembly passed Target 2000, which called for the continuation of the reforms, but placed greater emphasis on developing students' higher order thinking and problem solving skills, and establishing an expanded arts curriculum. In May 1991, the South Carolina Department of Education appointed curriculum framework writing teams, consisting of teachers, administrators and higher education faculty, to develop curriculum frameworks over three rounds. The writing teams examined reports issued by the South Carolina Curriculum Congress, the findings of a survey of member businesses conducted in 1992 by the South Carolina Chamber of Commerce to determine expectations for high school graduates, and the national standards. The South Carolina Review Panel appointed discipline-based subcommittees to facilitate reviews of the drafts in school districts, libraries, colleges, universities, and by representatives of the business community and parents before undertaking final revisions. The South Carolina State Board of Education adopted the frameworks for Mathematics, Visual and Performing Arts, and Foreign Languages in November 1993, English Language Arts in February 1996, Science in November 1996, Physical Education and Social Studies in March 2000, and Health and Safety in May 2000. The South Carolina Curriculum Frameworks formed the basis for writing teams to develop the first drafts for the South Carolina Academic Achievement Standards. Following reviews by educators, committees

of teachers revised the initial drafts before second drafts were presented for public reviews. After revisions, the State Board adopted South Carolina Academic Achievement Standards for Mathematics in November 1995, English Language Arts in February 1996, and Science in November 1996. In January 1998, the South Carolina Academic Achievement Standards for Mathematics and English Language Arts were merged with the standards recommended by the Performance and Accountability Standards for Schools Commission to form South Carolina Curriculum Standards. Then the State Board also adopted South Carolina Curriculum Standards for Foreign Language in January 1999, Visual and Performing Arts in December 1999, Social Studies and Physical Education in March 2000, and Health and Safety Education in May 2000.

Implementation Process: Developed in collaboration with the SouthEastern Regional Vision for Education and South Carolina teachers, the Department of Education published a professional development resource kit, *South Carolina Standards Implementation Guide*, in November 2000. The resource kit consists of a guide, curriculum standards, assessment techniques, a sequence for planning a standards-based module, sample modules, and advice and tools for standards-based education. The Standards-based Design Team provides training and technical assistance for implementing the South Carolina Curriculum Standards. The South Carolina Statewide Systemic Initiative established 13 hubs, which supported implementation of the Science and Mathematics frameworks and curriculum standards through professional development institutes. In December 2001, the Department of Education made available a web site, South Carolina Teaching, Learning, Connecting, which links lesson plans in WorldCom's MarcoPolo database, web sites providing materials and resources, and a searchable database of peer-reviewed lesson plans to the South Carolina Curriculum Standards.

Revision Process: The Education Accountability Act of 1998 requires the South Carolina Curriculum Standards in the core subjects to be reviewed every four years. The process involves the Department of Education appointing a state panel, and the Education Oversight Committee appointing three panels consisting of education experts, community members, and special education teachers. The panels prepare a report on the existing standards with recommendations for changes. The Department of Education commissions an external organisation to develop a draft based on the report's recommendations, and coordinates a review of the draft within the educational community. Following revision, the draft is presented to the Education Oversight Committee and the State Board for approval. The State Board adopted the revised South Carolina Foreign Language framework in January 1999, and revised South Carolina Curriculum Standards for English Language Arts in October 1998, Science in January 2000, Mathematics in December 2000, English Language Arts in May 2002, and Visual and Performing Arts in 2003.

Degree of State Control over Materials' Adoption: Subject-based instructional materials review panels advise the Curriculum and Instructional Materials Advisory Committee

about the selection of a multiple number of approved materials in each subject for the state list adopted by the State Board for a six-year adoption cycle. The state-level selection process includes Instructional Materials Review Panel hearings with publishers, and public hearings by the State Board following public reviews through displays at a varying number of sites.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. School districts may petition the State Board to adopt non-adopted materials.

Strategies Relating to Materials: The South Carolina curriculum frameworks provide guidelines for selecting and using materials of different media. Since the Education Accountability Act of 1998 required that the content of state-adopted materials must reflect the substance and level of performance specified in the South Carolina Curriculum Standards, the State Board amended the textbook adoption regulations to reflect this change effective from March 2000. The Department of Education published *Teaching the African-American Experience in the Palmetto State: Educator Resource Guide* listing books, web sites and television programs. The South Carolina Instructional Materials Central Depository offers a searchable database of state-adopted materials, and provides an on-line ordering system for South Carolina schools on its web site.

South Dakota

Title of State Standards: South Dakota Content Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 78%, C+; 1998, 67%, D+; 1999, 75%, C; 2000, 78%, C+; 2001, 61%, D-; 2002, 68%, D+, revision: yes; 2003, 75%, C, revision: yes; 2004, 79%, C+, revision: yes; FF - 1998, F; 2000, B-

Components: The South Dakota Content Standards, which present goals, indicators and benchmarks, provide the basis for developing local course guidelines. The Technical Guides for the core subjects serve as resources to assist educators implement the content standards.

Subjects: Communication Arts; Fine Arts; Health Education; Mathematics; Physical Education; Reading; Science; Social Studies; and World Language

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: Beginning in 1994, the South Dakota Department of Education and Cultural Services developed drafts of standards for Mathematics and Science, whilst drafts of standards for Language Arts, Social Studies, Fine Arts and Health were developed with federal and state funds. Distributed to schools across South Dakota for review early in 1996, the drafts were then revised and adopted by the South Dakota Board of Education in June 1996. In March 1997, the South Dakota Legislature passed Senate Bill 170, requiring the Department of Education and Cultural Services to develop and submit content

standards for Communications Language Arts and Mathematics by July 1998, and Science and Social Studies by July 1999. Following direction from Governor Bill Janklow that the original standards be revised from broad, general to specific, measurable standards, teams of teachers were appointed to refine the drafts. A set of the revised drafts and technical guides for the core subjects, which were released for public review in March 1998, were revised following public hearings before being disseminated for public review. Teachers reviewed the drafts for the remaining subjects areas. Following final revisions, the State Board adopted the South Dakota Content Standards for Communications Language Arts and Mathematics in December 1998, Science and Social Studies in June 1999, Health Education and Physical Education in March 2000, and Fine Arts and World Language in June 2000. In March 2000, Governor Janklow appointed the 32-member Citizens' Education Review Panel to examine the delivery of elementary and secondary education in South Dakota. After meeting on several occasions, the Panel released a draft report in November 2001. Following three public hearings on the proposed recommendations, the Panel released the final report in January 2002, which recommended that school districts should provide equal educational opportunities by requiring accountability, a uniform curriculum, qualified teachers, expanded supervision, and community involvement.

Implementation Process: Following adoption of the original standards in June 1996, the Department of Education and Cultural Services initiated a series of professional development seminars providing a process for teams from school districts to develop local curricula aligned to the standards. Required by law to have adopted course guidelines aligned to the South Dakota Content Standards for Communications Language Arts and Mathematics by July 1999, and Science and Social Studies by July 2000, each school district conducted an implementation process involving teachers, parents and community members. In 1998, the Department of Education and Cultural Affairs conducted introductory sessions to familiarise teachers with the South Dakota Content Standards, and from 1999 technical assistance workshops and seminars to assist school administrators develop course guidelines.

Revision Process: In 2001, the State Board approved a plan for revising the South Dakota Content Standards in the core subjects. Standards revision committees revised the standards by taking account of recent developments in each discipline and consulting the educational community. The State Board adopted revised South Dakota Content Standards for Communication Arts and Reading in January 2004 and Mathematics in May 2004.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: Course guidelines, developed by local school districts, must include specific resources to address the South Dakota Content Standards at particular grade levels. The Citizens' Education Review Panel recommended that the State Board

should adopt procedures and standards for the review and approval of textbooks. In February 2002, the Department of Education and Cultural Services launched the Weekly South Dakotan, a web site providing nine units on South Dakota history for grade 4 as a means of overcoming the lack of a suitable textbook.

Tennessee

Title of State Standards: Tennessee Curriculum Frameworks

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, no; 1998, no; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1997, 92%, A-; 1998, 84%, B; 1999, 68%, D+; 2000, 64%, D; 2001, 59%, F; 2002, 79%, C+, revision: yes; 2003, 82%, B-, revision: yes; 2004, 86%, B, revision: yes; FF - 1998, D-; 2000, F

Components: The Tennessee Curriculum Frameworks, which organise content standards, learning expectations, performance indicators and sample performance tasks by strands, provide the basis for planning educational programs in school districts.

Subjects: Computer Technology; Dance; English as a Second Language; English Language Arts; Foreign Language; Mathematics; Music; Science; Physical Education and Lifetime Wellness; Service Learning; Social Studies; Theatre; and Visual Art

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1984, the Tennessee General Assembly passed the Comprehensive Education Reform Act, which placed greater emphasis on music and art at the elementary level, and mathematics and science at the secondary level, as well as requiring educational programs to be improved in measurable ways within five years. In 1986, the Tennessee Statewide School-College Collaborative for Education Excellence was initiated with the formation of several subject-based task forces, which examined Tennessee's existing curriculum documents. In 1992, the Tennessee General Assembly passed the Education Improvement Act, which led to the compilation of a curriculum guide outlining skills and concepts for the core subjects, and encouraged professional groups in the various subjects to align the existing curriculum documents to the national standards.

Implementation Process: The Tennessee Department of Education collaborates with the Appalachia Educational Laboratory's Mathematics and Science Consortium to provide training through teams based in each of Tennessee's nine regions. Beginning in 2000, the Department of Education provided school districts with summer institutes targeted at the revised English Language Arts, Mathematics, Science, and Social Studies frameworks.

Revision Process: Undertaken on a rotation schedule over a six-year cycle, revision of the subjects in the Tennessee Curriculum Frameworks is conducted by subject-based curriculum framework committees. Beginning in 1999, committees of teachers revised the standards and learning expectations, and added performance indicators to the English Language Arts, Mathematics, Science, and Social Studies frameworks. The State Board adopted the revised frameworks in August 2001.

Degree of State Control over Materials' Adoption: Subject-based textbook review committees advise the State Textbook Commission about the selection of a multiple number of approved materials in each subject for the state list adopted by the State Board for a six-year adoption cycle. The state-level selection process includes State Textbook Commission hearings with publishers, and public hearings by the State Board following public reviews through displays at ten district textbook collections.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards.

Strategies Relating to Materials: The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. The State Textbook Commission adopts only materials that enrich and support the Tennessee Curriculum Frameworks. The Tennessee Book Company offers a catalogue of state-adopted materials and an on-line ordering system for Tennessee schools on its web site.

Texas

Title of State Standards: Texas Essential Knowledge and Skills

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 98%, A; 1998, 90%, A-; 1999, 88%, B+; 2000, 88%, B+; 2001, 84%, B; 2002, 82%, B-, revision: no; 2003, 79%, C+, revision: no; 2004, 79%, C+, revision: no; FF - 1998, B; 2000, B

Components: The Texas Essential Knowledge and Skills provide basic understandings, which are matched to performance descriptions.

Subjects: The Texas Essential Knowledge and Skills consist of two clusters. The Foundation Curriculum comprises English Language Arts and Reading, Mathematics, Science, and Social Studies. The Enrichment Curriculum comprises Agricultural Science and Technology Education, Business Education, Career Orientation, Fine Arts, Health Education, Health Science and Technology Applications, Home Economics Education, Languages other than English, Marketing Education, Physical Education, Spanish Language Arts and English as a Second Language, Technology Applications, Technology Education and Industrial Technology Education, and Trade and Industrial Education.

Grade Ranges: K; 1; 2; 3; 4; 5; 6; 7; 8; and 9 to 12

Developmental Process: In 1994, the Texas State Board of Education adopted a five-year plan to align the state assessment program with the state curriculum. In June 1995, the Texas Legislature directed the State Board to adopt essential skills and knowledge. Subsequently, 15 subject teams were formed, consisting of more than 400 teachers, curriculum specialists, university professors, business people, representatives of professional associations, and parents, which met collectively to determine issues of consistency, comparability and articulation before proceeding separately to produce the initial drafts. In addition, a Connections Team promoted interdisciplinary connections, and State Board review committees, composed of 120 people, reported their analyses of the drafts directly to the State Board. Completed in February 1996, the drafts were submitted to public and expert review following public hearings in every region across Texas, and then revised on the basis of more than 12,000 responses to produce second drafts completed in July 1996. After a public review produced nearly 17,000 responses, the writing teams and editorial experts revised the second drafts, which were completed in December 1996. After approving a schedule for considering and adopting the Texas Essential Knowledge and Skills in September 1996, the State Board met between January and July 1997 to review the completed drafts before adoption of the Enrichment cluster in April 1997 and the Foundation cluster in July 1997. Dissatisfied with the whole language approach embodied in the adopted Texas Essential Knowledge and Skills for English Language Arts, a group from the writing team and the State Board review committee led by Donna Garner, developed the Texas Alternative Document presenting a phonics analysis approach (Lindsay, 1997). The Southwest Educational Development Laboratory developed a Texas

Framework for Languages other than English published in 1997. The Social Studies Center for Educator Development in Region VI Education Service Center at Huntsville and the Texas Education Agency developed the Texas Social Studies Framework published in 1999. The Center for Educator Development in Fine Arts in Region XX Education Service Center at San Antonio developed curriculum frameworks for Art, Music, Theatre, and Dance.

Implementation Process: The Texas Essential Knowledge and Skills were disseminated to institutions of higher education, regional education service centres and school districts in the autumn of 1997 for implementation during 1998-1999. Professional development for implementing the Texas Essential Knowledge and Skills is provided by ten centres for educator development. The Mathematics Center for Educator Development in the University of Texas at Austin undertook three initiatives. From 1997, leaders were provided with the knowledge, skills and tools necessary to implement the Texas Essential Knowledge and Skills through TEKS for Leaders. The Texas Statewide Systemic Initiative offered resources. TEXTEAMS provided a standards-based professional development program for teachers of mathematics and science. The Texas Science Center in Region IV Education Service Center at Houston assisted school districts align curriculum, instruction and assessment in science by providing professional development activities and alignment templates for district and school administrators and teachers. The Texas Regional Collaboratives for Excellence in Science Teaching, partnerships between universities, regional education service centres and school districts, provided professional development academies for science teachers in regions I, II, III, IV, VII, VIII, X, XI, XII, XIII, XIV, XV, XVI, XVII, XIX, and XX. In partnership with the Region XIII Education Service Center, the Texas Center for Reading and Language Arts in the University of Texas at Austin undertook five initiatives. Professional development was enhanced in English, English-as-a-Second Language and Spanish Language Arts by training a cadre of school-level specialists and publishing guides. Research studies were conducted into implementing effective reading instruction and professional development. Reading programs were evaluated. Several special education projects related to reading and language arts were conducted. The Texas Family Literacy Center facilitated networking and advocacy, research and dissemination, and professional development for family literacy providers. From 1997, the Social Studies Center for Educator Development, and from 2000, the Social Studies Center undertook four initiatives. Biographies of people and glossaries of terms named in the Texas Essential Knowledge and Skills were published. Bibliographies of materials that correlate with the Texas Essential Knowledge and Skills were published. Lists of CD-ROMs and Internet sites that enhance the teaching of the Texas Essential Knowledge and Skills were published. Developed and disseminated in 2000, a CD-ROM, *Tool Kit for Architects of Learning in the 21st Century*, brought the resources for Social Studies together. Beginning in June 1998, the Languages other than English Center for Educator Development in the Southwest Educational Development Laboratory trained facilitators to conduct workshops, and

provided professional development through on-line courses. The Texas Center for Bilingual ESL Education in Austin provided resources for teachers of bilingual and English-as-a-second-language programs. The Technology Applications Center for Educator Development in the University of North Texas at Denton provided samples of teaching and learning projects and lesson plans using information technology, as well as assessment, professional development and program development resources for information technology. Supported by a network of career and technology curriculum centres housed in Texas' universities, the Texas CATE Secondary Workforce Education Clearinghouse provides links to web sites and searchable databases of resources and programs for career and technology education. The Center for Educator Development in Fine Arts provided resources for professional development of teachers based on several models, and coordinates an annual fine arts summit. The Health and Physical Education Center for Educator Development in the Region XII Education Service Center at Waco offered workshops, disseminated a video, and conducted research studies in health and physical education.

Revision Process: Revision of the Texas Essential Knowledge and Skills for the Foundation cluster is undertaken on a rotation schedule over a six-year cycle, whilst revision of the Texas Essential Knowledge and Skills for the Enrichment cluster is undertaken according to a cycle determined by the State Board.

Degree of State Control over Materials' Adoption: Subject-based state textbook review panels advise the commissioner about the selection of a multiple number of approved materials for the state lists of conforming and non-conforming materials in each subject of the Foundation cluster adopted by the State Board for a six-year cycle. Subject-based state textbook review panels advise the commissioner about the selection of a multiple number of approved materials for the state lists of conforming and non-conforming materials in each subject of the Enrichment cluster adopted by the State Board according to a cycle which it determines. The state-level selection process includes State Textbook Review Panel hearings with publishers, and public hearings by the State Board following public reviews through displays at the 20 regional education service centres.

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local boards of trustees, from state adoption lists of conforming and non-conforming materials. Local school district committees may adopt non-adopted materials in each subject of the Enrichment cluster.

Strategies Relating to Materials: The changes to the state-level materials adoption procedure, amended by Senate Bill 1, which was passed by the Texas Legislature in 1995, introduced different cycles for the Foundation and the Enrichment clusters, and the concept of conforming and non-conforming materials. (Conforming materials meet specified manufacturing standards, contain subject matter covering each element of the Texas Essential Knowledge and Skills, and are free of factual errors. Non-conforming materials meet specified manufacturing standards, contain subject matter covering at least half of the

elements of the Texas Essential Knowledge and Skills, and are free of factual errors.) With Proclamation 1997, the State Board initiated a coordinated process, in which revision of the Texas Essential Knowledge and Skills for a specific subject is followed closely by the adoption of materials. The Texas Education Agency redesigned the Educational Materials System (EMAT), originally developed in 1991 as a manual system for acquiring, tracking and supplying state-adopted materials to school districts. In order to improve the flexibility and efficiency of the system, the Texas Education Agency initiated the EMAT Online project in September 1997 to convert EMAT into an Internet-based system connecting publishers, depositories, freight companies, and school districts. Concurrent with designing the electronic system for data interchange, the Texas Education Agency convened a Textbook Coordinators Conference at Austin in December 1997 to inform publishers, depositories and school district coordinators about the features of EMAT Online. EMAT Online was used in 19 pilot school districts in March 1998 to process annual requisitions for materials before being extended to other school districts on a voluntary basis for processing the supplemental requisition in April and May of 1998. In July 1998, all school districts with access to the Internet were connected to EMAT Online, and training materials were disseminated to district textbook coordinators. In October 1998, the Texas Education Agency published a guide for depository personnel to access EMAT Online, view and correct shipment data. Beginning in November 1998, the Texas Education Agency broadcasted a series of training videos to assist district textbook coordinators in using EMAT Online for updating school district profiles, and requisitioning, paying, reporting and returning materials. EMAT Online was fully implemented in March 1999, when school districts with access to the Internet used the system to order materials for the 1999-2000 school year. DDS Southwest provides an on-line ordering system for Texas schools on its web site. The Texas Statewide Systemic Initiative published two guides, one for algebra and geometry in 1997 and the other for mathematics in 1998, outlining procedures for using the Texas Essential Knowledge and Skills as the focal point for selecting materials. The Texas Family Literacy Center provides the Family Literacy Clearinghouse, offering a searchable database of reviews on curriculum materials and professional development materials for family literacy providers. The Social Studies Center published annotated bibliographies of materials that correlate with the Texas Essential Knowledge and Skills. Founded in 1989, the Publishers Resource Group at Austin provides consultancy services for publishing companies in developing materials, providing graphic design, aligning materials to national, state and local standards and tests using the Standards Mapping and Assessment Resource Tool, and developing tests.

Utah

Title of State Standards: Utah Core Curriculum

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, no; 1998, no; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1997, 97%, A; 1998, 85%, B; 1999, 72%, C-; 2000, 76%, C; 2001, 73%, C; 2002, 74%, C, revision: no; 2003, 76%, C, revision: no; 2004, 77%, C+, revision: no; FF - 1998, C+; 2000, C+

Components: The Utah Core Curriculum organises objectives by content standards.

Subjects: Educational Technology; Fine Arts; Foreign Language; Health Education; Language Arts; Library Media; Mathematics; Physical Education; Science; and Social Studies

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In January 1984, the Utah State Board of Education established a policy requiring the identification of specific core curriculum standards. This action was followed by three years of extensive work involving the educational community identifying, trial testing, and refining the Utah Core Curriculum.

Implementation Process: Teachers are assisted in implementing revised subjects through in-service sessions conducted by district facilitators initially trained through a train-the-trainers process. The Utah State Office of Education and the Utah System of Higher Education operate the Utah Education Network, which provides UtahLINK, a web site containing a searchable database of lesson plans contributed by Utah teachers.

Revision Process: Revision of the subjects of the Utah Core Curriculum, which is undertaken alternately over a five-year cycle, is conducted by subject-based core steering committees, consisting of teachers, administrators and university faculty. Each Core Steering Committee reviews relevant research literature to develop intended learning outcomes, surveys teachers to identify needed changes, and receives input from parents, students, pre-service educators and the business community at hearings. The development of drafts in each subject is undertaken by a Writing Team, which presents the initial draft to curriculum specialists, teachers, university faculty and parents for review. Following revision, the draft is then piloted in schools, and presented for comment at public hearings. After revision, the final draft is presented to the State Board for adoption. Social Studies (3 to 6), Language Arts (7 to 12), Library Media (3 to 6), and Information Technology were revised in 1991. Mathematics (3 to 7) was revised in 1993. Mathematics (8 to 12), Science (3 to 6), Healthy Lifestyles (7 to 12), and Science (3 to 6) were revised in 1994. Mathematics (7 to 12) and Science (7 to 12) were revised in 1995. Language Arts (3 to 6), Library Media (7 to 12), and Social Studies (7 to 12) were revised in 1996. Fine Arts (3 to 6), Foreign Language, and Healthy Lifestyles (3 to 6) were revised in 1997. Health Education (7 to 12) and Language Arts (7 to 12) were revised in 1999. Educational Technology, Library Media (3 to 6), and Social Studies (3 to 6) were revised in 2000. Fine Arts (7 to 12) and Science were revised in 2001. Mathematics (7 to 12), Social Studies (7 to 12) and Science (3 to 6) were revised in 2002. Early Years (K to 2), Language Arts (3 to 6), Mathematics (3 to 6), Physical Education (7 to 12) and Science (7 to 12) were revised in 2003.

Degree of State Control over Materials' Adoption: Subject-based instructional materials advisory committees advise the State Instructional Materials Commission about the selection of a multiple number of approved materials in each subject for the state list adopted by the State Board for a five-year adoption cycle.

Degree of Local Control over Materials' Adoption: Local school district committees select materials from the state adoption list, which are adopted by local school boards. School districts may adopt non-adopted materials.

Strategies Relating to Materials: The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. The State Instructional Materials Commission categorises submitted materials against the Utah Core Curriculum as adopted, limited or teacher resource. In December 2002, the State Office of Education contracted ProCert Labs, a company based at Orem, Utah, specialising in course-ware product testing, to conduct a pilot program in correlating materials submitted voluntarily by publishers to the Utah Core Curriculum as an alternative to review by instructional materials advisory committees. The State Office of Education provides on its web site the Recommended Instructional Materials System, a searchable database of state-adopted materials ranked by approval category to the Utah Core Curriculum. UtahLINK contains teacher-developed lesson plans. The Mountain State Schoolbook Depository provides a catalogue of state-adopted materials, offers an on-line ordering system for Nevada and Utah schools, and collaborates with the Northwest Textbook Depository in providing a searchable database of materials.

Vermont

Title of State Standards: Vermont Framework of Standards and Learning Opportunities

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: yes, curriculum: no; EPE - 1997, 95%, A; 1998, 85%, B; 1999, 69%, D+; 2000, 70%, C-; 2001, 65%, D; 2002, 74%, C, revision: yes; 2003, 75%, C, revision: yes; 2004, 75%, C, revision: yes; FF - 1998, D+; 2000, D+

Components: The Common Core of Learning provides a curriculum rationale. The Vermont Framework of Standards and Learning Opportunities, which provides local educators with a framework for developing standards-based curricula, consists of three components: Vital Results present performance standards; Fields of Knowledge standards present content standards; and Learning Opportunities present recommended practices to support all students in attaining the standards.

Subjects: The Vermont Framework of Standards and Learning Opportunities consists of two parts. Vital Results standards relate to broad expectations in Communication, Reasoning and Problem Solving, Personal Development, and Civic-Social Responsibility. Fields of Knowledge standards specify concepts, content and skills in three content areas:

Arts, Language, and Literature; History and Social Sciences; and Science, Mathematics, and Technology.

Grade Ranges: pre-K to 4; 5 to 8; and 9 to 12

Developmental Process: In August 1993, the Vermont State Board of Education adopted the Common Core of Learning specifying Vital Results and Fields of Knowledge, which had been distilled from the findings of more than 40 community focus forums attended by more than 4,000 Vermont residents. The first drafts of the Vermont Framework of Standards and Learning Opportunities were developed by three commissions, one appointed to each Field of Knowledge, which referred to drafts of the national standards, standards' documents from other states, and other reference documents. Next, the Framework Steering Committee unified the drafts from the three commissions into a single document, which was presented for review at public meetings. The draft document was revised on the basis of responses before being presented to educators, school board members, community members and national experts for a second review. A Performance Standards Task Force met during 1994 and 1995 to determine how the standards could be more clearly articulated to show the degree or quality of performance expected of students. Meetings held with staff members of the New Standards Project led to reflection about the place of this project's work in the framework. The final draft was presented to the State Board, which adopted the Vermont Framework of Standards and Learning Opportunities in January 1996.

Implementation Process: In December 1996, the Vermont Department of Education convened the Conference on Standards Based Curriculum and Learning to increase awareness of the Vermont Framework of Standards and Learning Opportunities. The Department of Education recommended that the Vermont Framework of Standards and Learning Opportunities should be implemented as an element of each school's action plan developed using a guide, *Equity and Excellence: Action Planning Guide*. Each school forms an action planning team consisting of leaders, administrators, parents, community and local board members. The action planning team reviews data available on student performances, sets priorities, writes an action plan setting performance targets, presents the plan to the local board for approval, implements the plan, and reports progress in implementing the plan to the school community. Beginning in 1999, the Vermont Partnership for School Improvement convened summer institutes in mathematics, science and language arts to support the implementation of local action plans. Following a grant made in 1995, the Department of Education and IBM Corporation formed the Vermont Reinventing Education Partnership to build a web site, Standards into Action. First made available on the Internet in November 1999, Standards into Action links lesson plans in WorldCom's MarcoPolo database to the Vermont Framework of Standards and Learning Opportunities.

Revision Process: The Vermont Framework of Standards and Learning Opportunities is reviewed every two years by the Framework Users Group consisting of Department of

Education staff, school administrators, teachers, students, and representatives from higher education and the State Board. The State Board approved extensive revisions to the History and Social Sciences standards in May 1999, specific revisions to the Mathematics and Communications standards in October 1999, and extensive revisions to the Personal Development and Civic-Social Responsibility standards in March 2000. A revised Vermont Framework of Standards and Learning Opportunities was published in 2000.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: No strategies were identified.

Virginia

Title of State Standards: Standards of Learning

Standards Grades: AFT - 1995, yes; 1996, yes; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum (English, Mathematics, Science, Social Studies); EPE - 1997, 86%, B; 1998, 94%, A; 1999, 92%, A-; 2000, 92%, A-; 2001, 86%, B; 2002, 86%, B, revision: yes; 2003, 86%, B, revision: yes; 2004, 85%, B, revision: yes; FF - 1998, C+; 2000, C+

Components: The Standards of Learning organise content standards by strands. The Standards of Learning Curriculum Frameworks provide additional guidance for developing educational programs. The Sample Curricula present guidelines to assist school divisions develop local curricula. The Teacher Resource Guides, which amplify the knowledge and skills presented in each Standard of Learning, serve as tools for developing curricula, teaching and learning, and classroom assessment.

Subjects: Computer Technology; Driver Education; English; Fine Arts; Foreign Language; Health; History and Social Science; Mathematics; Physical Education; and Science

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: The Virginia Board of Education used a process of broad-based consultation in 1981 to develop Standards of Quality, which incorporated Standards of Learning. Appointed by Governor Gerald Baliles in 1986, the 16-member Governor's Commission on Excellence in Education identified seven broad educational issues facing Virginia, and recommended that the Standards of Quality be revised. In June 1994, the Virginia Department of Education approved a process for refining and revising the Standards of Learning for the core subjects. This work was accomplished by contracting four school divisions: Fairfax County for Mathematics; Prince William County for Science; Virginia Beach City for English, Reading and Language Arts; and Newport News for Social Studies. Each of these lead divisions identified a consortium of school divisions to assist in the revision process conducted by committees of teachers, curriculum specialists, higher education faculty, parents and representatives from business and industry, professional organisations and special interest groups during the summer of 1994. The revised

Standards of Learning were reviewed at ten public hearings conducted across Virginia in March 1995. Following revision, the Standards of Learning for the core subjects were adopted by the Board of Education in June 1995. Beginning in 1998, the Department of Education worked with committees of curriculum coordinators, teachers and college faculty to develop teacher resource guides for the core subjects. The History and the Social Sciences guide was published in July 1999, and the Mathematics, Science and English guides were published in June 2000. In September 1998, the Department of Education contracted the College of William and Mary at Williamsburg to assist groups of curriculum specialists and teachers develop sample curricula and curriculum frameworks. In June 2001, the Department of Education released the sample scope and sequence guides for English, Mathematics, and Science. The Department of Education released Standards of Learning Curriculum Frameworks for History and Social Science in June 2001, Mathematics in 2002, English in February 2003, and Science in May 2003. In April 1999, the Board of Education initiated a process to revise the Standards of Learning for the remaining subjects over two rounds. Under the direction of steering committees, writing committees consisting of principals, supervisors, teachers, parents, students and representatives of professional associations developed drafts, which were reviewed by the educational community. Following revisions, the drafts were reviewed at public hearings. After final revisions, the Board of Education adopted Standards of Learning for Fine Arts in May 2000, Foreign Language in June 2000, and Health Education, Physical Education, and Driver Education in April 2001.

Implementation Process: In May 1996, the Department of Education held four Standards of Learning 'share fairs' to provide opportunities for educators from all school divisions to participate in seminars on aligning local curricula to the Standards of Learning. In May 1998, the Department of Education introduced the Standards of Learning Training Initiative, which funded school divisions to develop and implement local plans incorporating training for teachers and administrators. In June 1998, the Department of Education disseminated a Technical Assistance Resource Document presenting effective staff development models, resource lists for each subject, guidelines for program design and evaluation, resource lists for professional development of administrators and assessment, and details of training courses offered by institutions of higher education. In October 1998, Virginia's first lady, Roxane Gilmore launched the Commonwealth of Knowledge, a web site providing a searchable database of teacher-developed lesson plans aligned to the Standards of Learning. In January 2002, James Madison University at Harrisonburg took over the management of the Commonwealth of Knowledge, and redesigned the web site following a survey of users in August 2002. In the spring of 2000, the Department of Education conducted an on-line survey to identify teachers' perceptions about implementation of the Standards of Learning. Representing 35 percent of Virginia

teachers, 90 percent of the 30,766 respondents believed that they had the knowledge and skills to teach the Standards of Learning effectively.

Revision Process: In October 2000, the Board of Education adopted the policy that the Standards of Learning in all subjects will be reviewed, and revised as necessary, every seven years. The Board of Education adopted revised Standards of Learning for History and Social Science in March 2001, Mathematics in October 2001, English in November 2002, and Science in January 2003.

Degree of State Control over Materials' Adoption: Subject-based evaluation committees advise the Board of Education about the selection of a multiple number of approved materials for the state list adopted by the Board of Education for a six-year cycle. The state-level adoption process includes public input following displays at nine local examination sites.

Degree of Local Control over Materials' Adoption: Local school division committees select materials from the state list, which are adopted by local school boards. School divisions may adopt non-adopted materials.

Strategies Relating to Materials: In December 1995, the Board of Education delegated authority for textbook adoptions to the superintendent of public instruction, who instituted a procedure intended to establish a high degree of alignment between submitted materials and the Standards of Learning. In March 2002, the Board of Education abandoned this procedure by approving a resolution to adopt an approved list of materials for subjects under review. The Department of Education requires publishers to report correlations between submitted materials and the Standards of Learning. Additional funds were provided in the 1997-1998 school year to purchase new materials that address the Standards of Learning. In 1998, the Department of Education and the Virginia History Production Consortium produced *Virginia Pathways*, a five-part series with print and Internet materials for use in grades 4 and 5 to assist in learning key concepts of Virginia history. During May and June of 1999, the Department of Education held four Standards of Learning expositions at which correlated materials developed by the Department of Education, school divisions and commercial publishers, were displayed for the purpose of increasing resource sharing. In February 2000, the Department of Education published the *Standards of Learning Institutional and Training Materials*, a compilation of professional development and curriculum materials available in Virginia. The Commonwealth of Knowledge contains teacher-developed lesson plans.

Washington

Title of State Standards: Essential Academic Learning Requirements

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 86%, B; 1998, 89%, B+; 1999, 77%, C+; 2000, 77%, C+; 2001,

67%, D+; 2002, 68%, D+, revision: no; 2003, 70%, C-, revision: no; 2004, 77%, C+, revision: no; FF - 1998, D-; 2000, D-

Components: The Essential Academic Learning Requirements organise benchmarks, which are grouped by components. The Frameworks provide teachers with guidelines for planning and implementing programs.

Subjects: Arts; Communication; Health and Fitness; Mathematics; Reading; Science; Social Studies; and Writing

Grade Ranges: 4; 7; and 10

Developmental Process: In May 1991, Governor Booth Gardner created the Council on Education Reform and Funding, which worked for 18 months to produce a proposal for performance-based educational reform. In response, the State Legislature passed the Education Reform Act of 1992, creating the 11-member Commission on Student Learning, charged with identifying Essential Academic Learning Requirements, and developing standards-based assessments and an accountability system for schools. During the following year, the State Legislature extended the educational reform legislation with the Education Reform Act of 1993, which established four learning goals, time-frames for the assessment and accountability systems, a Certificate of Mastery requirement, and a legislative group to review education legislation. Commencing work in August 1992, the Commission created subject advisory committees consisting of teachers, parents, business leaders, community members and students to develop Essential Academic Learning Requirements for Reading, Writing, Communication, and Mathematics in the first round. First meeting in September 1993, these committees produced a draft in the spring of 1994, which was circulated widely for review. Following revisions, the Commission approved the Essential Academic Learning Requirements for the first round in March 1995. After informal public consultation, the Commission decided to revise the Essential Academic Learning Requirements in these subjects to improve their clarity, a process, which led to adoption of revised Essential Academic Learning Requirements for the first round in October 1995. In 1994, subject advisory committees were formed to develop Essential Academic Learning Requirements for Science, Social Studies, Health and Fitness, and the Arts in the second round. Drafts for the Essential Academic Learning Requirements for these subjects were reviewed by employing three strategies: discussions at the Commission's 1996 conference at Ellensburg; collection of comments from professional associations; and collection of responses following a video-conference held at nine locations across Washington. The Essential Academic Learning Requirements for the second round were adopted in April 1996. In the autumn of 1996, an ad hoc Revision Committee was appointed to refine benchmarks presented in a set of manuals for the Essential Academic Learning Requirements. After refinement, the manuals were reviewed at the Commission's 1997 conference at Ellensburg, revised on the basis of responses, and published in March 1997. Beginning in 1998, the Commission contracted subject experts, who developed

frameworks in consultation with educators across Washington. The frameworks for Reading, Writing, Communication and Mathematics were published in 1998, the Arts in 2001, and Social Studies in 2003.

Implementation Process: School districts were required by legislation to implement the Essential Academic Learning Requirements in 2000-2001. Teachers were trained in the subject matter of the Essential Academic Learning Requirements and assessment techniques at 14 regional training centres. In 1995, an Elementary Teachers Institute held to assist elementary teachers implement the Essential Academic Learning Requirements and offer appropriate teaching methods and assessment practices led to regional training centres convening similar institutes on a regular basis, and producing a training manual. The Commission also sponsored Project REAL, a training program bringing together teams from different school districts under the leadership of the University of Washington Extension to provide an understanding of the Essential Academic Learning Requirements and the new assessment system, and processes to align them to local curricula. In the spring of 1996, the Commission conducted a study to identify the progress made by school districts in aligning their curricula to the Essential Academic Learning Requirements. The seven school districts, sampled in the study, required more time, greater flexibility and continuing resources to support implementation. The standards for Reading, Writing, Communication and Mathematics were judged to be appropriate, but the standards for Science, Social Studies, the Arts, and Health and Fitness were considered overwhelming.

Revision Process: Commissioned by the Office of the Superintendent of Public Instruction to evaluate the Essential Academic Learning Requirements for Reading, Writing and Science, McREL reported in January 2003 that they differed to varying degrees from significant standards' documents in terms of breadth, depth, balance, rigour, clarity, specificity and consistency. In 2003, the Office of the Superintendent of Public Instruction appointed writing and review committees to refine the Essential Academic Learning Requirements in these subjects, and create grade-level content expectations. Following review of the drafts by legislative committees and focus groups of educators, the Reading and Mathematics documents were released in February 2004.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: In October 2004, the Office of the Superintendent of Public Instruction convened a review panel to evaluate basal materials for reading and mathematics submitted by publishing companies. The purpose of reviewing the materials was to assist school districts make decisions regarding the use of materials to close student achievement gaps.

West Virginia

Title of State Standards: West Virginia Content Standards and Objectives

Standards Grades: AFT - 1995, no; 1996, no; 1997, yes; 1998, yes; 1999, yes; 2001, standards: yes, curriculum: no; EPE - 1997, 98%, A; 1998, 89%, B+; 1999, 92%, A-; 2000, 88%, B+; 2001, 69%, D+; 2002, 76%, C, revision: no; 2003, 79%, C+, revision: no; 2004, 95%, A, revision: no; FF - 1998, C; 2000, C+

Components: The West Virginia Content Standards and Objectives organise objectives and performance descriptors by content standards.

Subjects: Art; Dance; Driver Education; Foreign Language; Health; Mathematics; Music; Physical Education; Reading and Language Arts; Science; Social Studies; Technology; Theatre; and Vocational

Grade Ranges: Grade ranges vary from subject to subject.

Developmental Process: In 1996, the West Virginia Legislature passed Senate Bill 300 enacting a package of reforms, including the development of a rigorous curriculum by revising the West Virginia Instructional Goals and Objectives. As a consequence, the West Virginia Board of Education adopted Policy 2520 providing revised West Virginia Instructional Goals and Objectives in the core subjects for all programs of study effective from July 1997. In April 2001, committees of educators began redefining the instructional goals and objectives as content standards and objectives over two rounds to reflect the national standards and current educational research. Educators attending professional development activities reviewed the drafts. Following revision, the Board of Education presented the drafts for public reviews in October 2001 for the first round in the core subjects and Vocational, and in January 2003 for the second round in Art, Dance, Foreign Language, Health, Music, Physical Education, Technology and Theatre. After subsequent public reviews of the revised drafts, the Board of Education approved the West Virginia Content Standards and Objectives for the first round in February 2002 and for the second round in April 2003. The West Virginia Content Standards and Objectives became effective in all subjects from July 2003.

Implementation Process: Implementation of the West Virginia Content Standards and Objectives is undertaken over a four-phase process. First, teachers' awareness is increased through professional development provided by institutions of higher education and eight regional education services agencies. Second, county or school curriculum teams align local curricula to the West Virginia Content Standards and Objectives. Third, teachers design lessons and select materials based on the West Virginia Content Standards and Objectives. Fourth, educators suggest experience-based modifications to the West Virginia Content Standards and Objectives to enhance student learning. Implementation of the West Virginia Content Standards and Objectives is facilitated by two information technology projects. In one project, the West Virginia Department of Education collaborated with IBM Corporation to develop Reinventing Education containing a database of best practices' units and lesson plans aligned to the West Virginia Content

Standards and Objectives. Reinventing Education also links lesson plans in WorldCom's MarcoPolo database to the West Virginia Content Standards and Objectives. In the other project, the Board of Education, the Department of Education, the West Virginia High Technology Consortium Foundation, county boards of education, colleges and universities, Bell Atlantic and West Virginia Public Broadcasting formed a consortium in 1998 to design the West Virginia TurnKey Solution project. Over the first five years of the project, almost 1,700 teachers created and posted nearly 1,000 integrated lesson plans linked to the West Virginia Content Standards and Objectives on the Solution Site, a web site developed by the EdVenture Group, a division of Monongalia County Schools Foundation.

Revision Process: Undertaken on a rotation schedule over a six-year cycle, revision of the programs of study is conducted by subject-based committees. Revised drafts of amendments, presented to the Board of Education, are then submitted for public review. Following revision, the amendments are incorporated into the appropriate program of study defined in Policy 2520.

Degree of State Control over Materials' Adoption: The Instructional Materials Advisory Committee selects a multiple number of approved materials in each subject for the state list adopted by the Board of Education for a six-year cycle. The state-level adoption process includes Instructional Materials Advisory Committee hearings with publishers.

Degree of Local Control over Materials' Adoption: County adoption committees select materials from the state adoption list, which are adopted by county boards of education. County boards may petition the Board of Education to adopt non-adopted materials.

Strategies Relating to Materials: The rotation schedules of the curriculum review and the state-level materials adoption cycles are sequenced. The West Virginia TurnKey Solution contains teacher-developed lesson plans.

Wisconsin

Title of State Standards: Wisconsin Model Academic Standards

Standards Grades: AFT - 1995, no; 1996, no; 1997, no; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 81%, B-; 1998, 80%, B-; 1999, 84%, B; 2000, 76%, C; 2001, 65%, D; 2002, 65%, D, revision: no; 2003, 78%, C+, revision: no; 2004, 77%, C+, revision: no; FF - 1998, D+; 2000, C-

Components: The Wisconsin Model Academic Standards, which present content and performance standards, provide model standards from which local standards are developed. The Curriculum Planning Guides provide guidelines for school districts in planning, implementing, supporting and evaluating programs.

Subjects: Agricultural Education; Art and Design Education; Business; Dance; English Language Arts; Environmental Education; Family and Consumer Education; Foreign Languages; Health Education; Information and Technology Literacy; Marketing Education;

Mathematics; Music; Physical Education; Science; Social Studies; Technology Education; and Theatre

Grade Ranges: K to 4; 5 to 8; and 9 to 12

Developmental Process: In January 1983, the Wisconsin Department of Public Instruction began the process of developing model curriculum planning guides by appointing committees of teachers, principals, university faculty, district administrators and curriculum specialists, which completed the guides for 19 areas of study in 1987 and 1988. In 1987, the Wisconsin Legislature required school districts to develop written curriculum plans over a three-year period covering 12 subjects. Beginning in the spring of 1995, the Department of Public Instruction formed task force groups consisting of educators and citizens to develop drafts of content and performance standards over three rounds (Schlug and Western, 2000). The first round began in the spring of 1996 when teachers piloted examples of performance tasks in classrooms, which led the task force groups to revise the standards, and develop proficiency standards. Following public forums held across Wisconsin in the autumn of 1996 to review the drafts, the Department of Public Instruction approved the Wisconsin Model Academic Standards for Visual Arts, Music, Theatre, Dance, Family and Consumer Education, Health Education, Physical Education, and Foreign Languages in September 1997. Opposition over the vague standards adopted in the first round from Parents Raising Educational Standards in Schools, formed in March 1994 by Leah Vukmir and other parents from school districts in south-eastern Wisconsin, led Governor Tommy Thompson to create the bipartisan, seven-member Council on Model Academic Standards in January 1997. Criticising the process used by the task force groups in the first round as too closed, the Council on Model Academic Standards required working groups of parents, teachers, business people, and citizens to be formed for the second and third rounds. Following revisions to the drafts, the Council on Model Academic Standards convened nine regional forums across Wisconsin to review the drafts for the second round in October 1997 and the third round in April and May of 1998. Governor Thompson approved the Wisconsin Model Academic Standards for the second round in English Language Arts, Mathematics, Science, and Social Studies in January 1998. Later in 1998, Governor Thompson approved the Wisconsin Model Academic Standards for the third round in Agricultural Education, Business, Environmental Education, Information and Technology Literacy, Marketing Education, and Technology Education. Beginning in the summer of 1998, the Department of Public Instruction appointed task forces in each subject to revise the curriculum planning guides to reflect the Wisconsin Model Academic Standards. The Department of Public Instruction published revised curriculum planning guides for English Language Arts, Mathematics and Social Studies in 2001, Science, International Education and World Languages in 2002, and Connected Curriculum in 2003. Implementation Process: Professional development for implementing the Wisconsin Model Academic Standards is provided through centres for standards and assessment based in 12

cooperative educational service agencies. The Office of the Governor, the North Central Regional Educational Laboratory and the Department of Public Instruction designed the Wisconsin Information Network for Successful Schools, which presents information on standards and assessment, data on individual schools, the attributes of successful schools, and best practices for implementation. Launched in October 2002, the Wisconsin Information Network for Successful Schools includes a Curriculum Resources Center, which contains lesson plans provided by the MarcoPolo Education Foundation and multimedia resources provided by the Wisconsin Educational Communications Board. These resources have been linked to the Wisconsin Model Academic Standards.

Revision Process: The Council on Model Academic Standards is charged with updating the Wisconsin Model Academic Standards as deemed necessary. The Wisconsin Model Academic Standards for Visual Arts were revised in February 2000, and renamed Art and Design Education.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: The curriculum planning guides for Mathematics, Science and Social Studies contain guidelines for selecting curriculum materials. The curriculum planning guide for English Language Arts contains a list of resources for selecting and evaluating children's literature.

Wyoming

Title of State Standards: Wyoming Content and Performance Standards

Standards Grades: AFT - 1995, not available; 1996, not available; 1997, not available; 1998, no; 1999, no; 2001, standards: no, curriculum: no; EPE - 1997, 55%, F; 1998, 66%, D; 1999, 73%, C; 2000, 70%, C-; 2001, 60%, D-; 2002, 62%, D-, revision: yes; 2003, 62%, D-, revision: yes; 2004, 65%, D, revision: yes; FF - 1998, not available; 2000, F

Components: The Wyoming Content and Performance Standards, which organise content standards, benchmarks and performance standards by strands, provide model standards from which local standards are developed.

Subjects: Career-Vocational Education; Early Childhood Readiness: Fine and Performing Arts; Foreign Language; Health; Language Arts; Mathematics; Physical Education; Science; and Social Studies

Grade Ranges: K to 4; 5 to 8; and 9 to 12

Developmental Process: In 1988, the Wyoming State Board of Education formed the Accreditation Task Force, which reviewed existing school accreditation standards and processes, recommending the adoption of an outcomes-based accreditation process with all students being expected to master a common core of knowledge. In January 1989, the State Board appointed the Education and Economics Task Force, which recommended that

expectations should be raised through partnerships held responsible for learning a common core of knowledge and skills. Following preliminary approval by the State Board of the recommendations of both task forces in January 1990, the plan was presented for review at meetings held across Wyoming. In March 1990, the State Board adopted rules and regulations for accrediting Wyoming schools on their efforts in articulating and assessing the common core of knowledge and skills. Beginning in 1997, six regional groups, consisting of representatives selected from each school district as well as universities and businesses, were appointed to develop content and performance standards. As a first step, each regional committee defined goals and benchmarks. Then, state standards committees drafted the standards over four rounds from the goals and benchmarks through a consensus process by referring to the national standards and standards' documents from other states. A two-stage process of reviews by focus groups of subject specialists, business and parent representatives and then by the public was followed by submission of the revised drafts to the State Board. The State Board adopted the Wyoming Content and Performance Standards for Language Arts and Mathematics in June 1998, Science and Social Studies in June 1999, Foreign Language, Health, and Physical Education in May 2000, and Career-Vocational Education, and Fine and Performing Arts in June 2001.

Implementation Process: The Wyoming Content and Performance Standards were implemented over four years commencing in the 1998-1999 school year. In October 2000, the Wyoming Department of Education contracted Copernicus Education Gateway to design the Wyoming Education Gateway, a web site providing a searchable database of teacher-developed lesson plans aligned to the Wyoming Content and Performance Standards.

Revision Process: State standards committees, consisting of representatives selected from each school district, revised the Wyoming Content and Performance Standards in all subjects during 2002. Following public review of the drafts in February 2003, the State Board adopted the revised Wyoming Content and Performance Standards in July 2003.

Degree of State Control over Materials' Adoption: none

Degree of Local Control over Materials' Adoption: Local school district committees select materials, which are adopted by local school boards.

Strategies Relating to Materials: No strategies were identified.

7.4 Conclusion

Researchers examining decision-making processes involved in curriculum planning in the states have recognised that they may be divided into two categories. In one group, responsibilities for decision-making have a long tradition of decentralisation with authority being vested in local school boards, whilst in the other group, responsibilities for these activities have been transferred in varying degrees to the state level with authority being vested in the state board. Reflecting a relatively equal balance between states applying

decision-making processes at either the statewide or local levels, this pattern has remained constant for many years. The northeastern and mid-western states have generally retained decision-making authority at the local level, whilst southeastern, southern and western states have transferred decision-making authority to the state level. The significance of this pattern is usually explained as reflecting regional traditions and styles of governance that have been extended to education. An analysis of the state profiles suggests that whilst regional traditions form perhaps the most important influence on the characteristics of standards-setting processes employed in the states, other factors, such as the amount of resources a particular state could mobilise towards the standards-setting effort, affected the outcome.

An examination of the state profiles for the northeastern and mid-western states, where the tradition of local control is strongest, indicates that these states can be categorised into four groups. The six New England states form a distinct group with five showing remarkable consistency in deriving state standards from consensual common cores of learning, acknowledging concerns for establishing the philosophical and moral principles underlying educational goals, which reflect the ethos of New England's puritanical and cultured heritage. Furthermore, all the New England states, except Maine, incorporate state standards into curriculum frameworks or guides. In keeping with the differences in the patchwork of diverse communities across New England, the processes employed to implement state standards usually focused on developing local plans. However, the emphasis on devolving decision-making authority to the local level meant that few strategies were devised to align materials to state standards.

The five states of the middle Atlantic seaboard reflect the more cosmopolitan outlook characteristic of the densely populated commercial and financial centre of the United States by showing a more diverse pattern in the components of the curriculum than the New England states. However, the components of standards-based education in New York show some resemblance to developments in the New England states, in that its foundation is based in the New Compact of Learning, a counterpart to the Common Core of Learning, but one grounded in the principles of systemic reform. Whilst Maryland and Pennsylvania have adopted only state standards, Delaware has incorporated state standards into curriculum frameworks, and New Jersey and New York support state standards with curriculum frameworks or guides. Greater emphasis in implementing state standards in the states of the middle Atlantic seaboard is placed on employing networks of trainers based in regional centres or school districts to provide professional development. The wider application of strategies for aligning materials to state standards may reflect the greater recognition given in these states to the role of materials within the reform process. For instance, considerable reliance in New York is placed on using peer-reviewed, teacher-

developed learning experiences, and in Pennsylvania on a curriculum alignment process involving teachers identifying materials to support local curricula.

The rural, but enterprising, culture of the states of the mid-west and Great Plains, long regarded as the heartland of isolationist attitudes, is mirrored in four approaches adopted to reconcile the definition of state standards with the strong tradition of local control. The states of Kansas, Minnesota and South Dakota form a group in which decision-making authority in standards-based reform shows greater acceptance of centralised control. Four outlying states, Alaska, Arizona, Hawaii and Washington, should be added to this group, since they share common approaches to standards-based reform. The solutions applied in these states fall into two categories with Arizona, Hawaii and Kansas adopting only state standards, whilst Alaska, Minnesota, South Dakota and Washington support state standards with curriculum frameworks or guides. The states of Missouri, Montana and Ohio form a second group exhibiting less centralised control with state standards being supported by model curriculum frameworks or guides. The approach of using state-developed standards as models for developing local standards or curricula is reflected in the states comprising the third group, which may be divided into two geographical clusters. The states of Michigan, Illinois and Wisconsin, adjoining the Great Lakes, form one cluster, but show little consistency in their application of the concept of model state standards. Illinois has adopted only model state standards, Michigan incorporates model state standards into curriculum frameworks, and Wisconsin supports model state standards with curriculum guides. The states of Colorado, Nebraska, North Dakota and Wyoming, the most westerly states in this group, form a second but less differentiated cluster. Colorado, North Dakota and Wyoming have adopted only model state standards, but Nebraska supports model state standards with curriculum frameworks. The fourth group, represented by only the state of Iowa, made little, if any, concession to the tradition of local control by being the only state failing to develop state standards. Many of these states engaged in considerable efforts to develop support materials and establish regional networks to assist school districts align local curricula to model state standards, as well as devising particular strategies to improve the match between materials and their model state standards.

Some of the southeastern, southern and western states, which employ centralised processes of decision-making, have a long history of educational reform. Once recognised for their low educational achievement, many of the states concentrated in the southern Appalachians and the southern Atlantic seaboard were the first states to enact systemic educational reforms in the 1980s. Early legislative reforms in Mississippi in 1982, Arkansas in 1983, Tennessee, South Carolina and North Carolina in 1984 provided little impetus for curriculum reforms. The reform movement culminated in the later and more

comprehensive Quality Basic Education Act of 1985 in Georgia, which led to the development of the Quality Core Curriculum, and the Kentucky Education Reform Act of 1990, which not only led to major curriculum reform but transformed Kentucky's antiquated educational system. The reform movement of the 1980s did not affect the western states and those states bordering this group to the south and north to the same extent. Rapidly growing populations, partly derived from high immigration rates, led state education agencies in California, Florida and Texas to respond to dynamic social changes affecting their large educational systems. The efforts made in these three states to implement newly developed state standards represent some of the most significant investments made in setting standards in the United States. In California, comprehensive systemic educational reform initiated in 1983 was followed by an extensive effort commencing in 1995 to develop state standards. In Florida, standards-based reform focused on applying the Curriculum Planning Tool, intended to facilitate teachers' planning of learning activities that reflect the goals and standards specified in the Sunshine State Standards and the Florida Curriculum Frameworks. In Texas, the Texas Essential Knowledge and Skills were implemented by contracting a wide range of regional centres to develop professional resources. An analysis of the components of the curriculum in the state profiles for the southeastern, southern and western states shows that these states can be categorised into three groups. Georgia, Idaho, New Mexico, Oklahoma, Texas, Utah and West Virginia adopted only state standards. Alabama, Arkansas, Kentucky, Mississippi and Tennessee incorporated state standards into curriculum frameworks. California, Florida, Indiana, Louisiana, Nevada, North Carolina, Oregon, South Carolina and Virginia supported state standards with curriculum frameworks or guides.

In many of these states, the influence of the reform movement was sufficient to stimulate the process of standards-setting, or to promote those states already having state curricula in place to incorporate standards into their curricula through reviews of the national standards. These states either relied on some form of centrally based training, or networks of trainers based in regional centres, to support implementation of statewide curricula, or left the responsibility for implementation to local education agencies. The process of revising state curricula was usually linked to the rotation cycle for adopting materials at the state level. Publishing companies or selection committees were required to correlate materials submitted for adoption to state standards in California, Florida, Georgia, Idaho, Nevada, New Mexico, South Carolina, Utah and Virginia. State education agencies and depositories in Arkansas, California, Florida, Idaho, New Mexico, Oklahoma, Oregon, South Carolina, Tennessee and Utah provided catalogues or searchable databases of state-adopted materials. State education agencies and depositories in Florida, New Mexico, Texas and Utah invested in establishing electronic ordering systems for state-adopted materials. California, Florida, Kentucky, Louisiana, Mississippi, Nevada, South Carolina

and Virginia modified their state-level materials adoption procedures to meet the challenges of standards-based reforms, although only Kentucky and Virginia decentralised their procedures in toto to meet the requirements of these reforms.

CHAPTER 8

NATIONAL CURRICULUM COLLABORATION IN AUSTRALIA

Originating from a perceived need to rationalise curriculum planning among the Australian states and territories, the initiative to develop the national statements and profiles through a process of national collaboration between 1986 and 1993 was based on assumptions and goals driving the broader agenda for educational reform during the 1980s. The predominance of the Commonwealth government's agenda until 1993 led to the ascendancy of a corporate approach to managing the curriculum, which was characterised by subordinate groups carrying out key decisions made by superordinate groups. The failure of these groups to consult the wider educational community led to controversy over incorporation of an outcome-based approach, an emphasis that perturbed mathematics educators. This controversy led these interest groups to lobby state politicians, which ultimately caused conservative ministers to block approval of the national statements and profiles in July 1993. The action of the Australian Education Council and the Ministers for Vocational Education, Employment and Training in referring the national statements and profiles to the states and territories for endorsement ensured that a prescriptive national curriculum, which overrode states' rights was not adopted. Instead, the national statements and profiles formed a common foundation for the states and territories to develop curricula that met their particular needs.

The purpose of this chapter is to examine the impact of decisions in curriculum planning on the system for developing, selecting and using resources prevailing in the materials' marketplace in Australia. An assumption underlying this rationale is that the development, selection and use of resources are dependent on the processes and the products of curriculum reform. Although Commonwealth government agencies are not responsible for developing and selecting the resources used in schools, this chapter is intended to identify how the context for curriculum reform has impinged on these agencies acquiring a role in determining the development, selection and use of resources.

8.1 Historical Background

The election of the federal Labor government in 1983 initiated a period in which greater direction was defined in the growing involvement of the Commonwealth government in primary and secondary education. Perceived as having an important role for stimulating economic recovery and social equity, this involvement led the Commonwealth Minister to ask the Commonwealth Schools Commission to review the Commonwealth specific purpose programs. In its report, the Commonwealth Schools Commission (1985) presented a five-year plan for the Commonwealth specific purpose programs between 1987 and 1992,

recommending consolidation of the programs into functional groups centred on equity, school development, and national priority areas. In August 1984, the Commonwealth Minister appointed the five-member Quality of Education Review Committee to develop strategies for the Commonwealth government to improve the effectiveness and efficiency of its involvement in primary and secondary education. The committee met on 11 occasions, conducted hearings with employer, labour and education organisations, received testimonies from groups and individuals, and reviewed current national and state reports. In its report, the Quality of Education Review Committee (1985) recommended directing general recurrent and capital grants to priority areas, and revising, terminating or amalgamating particular specific purpose programs into general recurrent grants.

The shift from greater direction in federal intervention to the reform of Australian education was anticipated in the review conducted by the Commonwealth Schools Commission late in 1986. Its purpose was to analyse demands made on secondary education in relation to youth policy, and recommend a Commonwealth specific purpose program to follow the Participation and Equity Program. The Commission received submissions from national and state education organisations, and held public hearings in 23 education centres at which teachers and community members presented their perceptions of secondary education and youth policy. In its report, the Commonwealth Schools Commission (1987) recommended that broad national agreement should be sought in curriculum planning, and that educational systems should issue frameworks and guides from which schools should develop detailed curriculum plans. In order to attain a target of 65 percent retention of students in grade 12 by 1992, the Commission recommended that the Commonwealth government should institute a Commonwealth specific purpose program for secondary education. The program should promote balance, rigour, relevance and cohesion in curriculum development, promote equitable, national compatibility and inclusiveness in accreditation, assessment and credentials, support the improvement of school organisation and climate, promote in-service teacher education, and improve links with the wider community.

Reform of the Australian educational system became a priority for the federal Labor government in 1987. This reform was mooted initially in a statement issued by the Commonwealth Minister in September 1987 stating that educational outcomes should be congruent with the requirements of a restructured economy (Dawkins, 1987). It proposed that a significant role be given to the higher education system in promoting the Commonwealth's economic and social objectives. Two papers followed this statement. A discussion paper was intended to elicit responses before new legislation came into effect during 1988 (Australia Parliament, 1987). A position paper outlined changes to technical and further education intended to increase participation, improve its quality, redistribute

funds, raise industry's commitment to training, improve training for disadvantaged groups, and improve its efficiency and effectiveness (Dawkins and Holding, 1987).

The reform of the higher education system had important implications for determining the priorities of primary and secondary education, in particular, the reform of teacher education and retraining, the curriculum, and funding provisions. The effect of the changes was specified in a policy statement released in May 1988, in which the Commonwealth Minister invited cooperation from the states and territories towards a national effort to strengthen the capacity of Australian schools (Dawkins, 1988). This statement presented a rationale for developing a common curriculum framework for Australian schools based on common objectives, which would also accommodate specific content to meet particular regional needs. The common curriculum framework would be supported by a common approach to student assessment and reporting. Lingard et al. (1993) interpreted this policy statement as signifying a new approach to policy-making for schooling by introducing corporate federalism, in which the Commonwealth centralised aspects of policy relating to economic reform, but devolved other functions to the states.

8.2 Hobart Declaration on Schooling

In 1988, the Australian Education Council began developing a statement of national goals for education in Australia. At the sixtieth meeting of the Australian Education Council in April 1989, the state, territory and Commonwealth ministers for education issued the Hobart Declaration on Schooling. It established ten Common and Agreed National Goals for Schooling in Australia. It also proposed publishing an annual national report on schooling, recommended continuing national collaboration in curriculum development, founded the Curriculum Corporation, nominated the use of a common handwriting style in Australian schools, established a common age for school entry, and proposed developing strategies to improve teacher education.

8.3 Adelaide Declaration on Schooling

In March 1997, the Ministerial Council on Education, Employment, Training and Youth Affairs decided to review the Common and Agreed National Goals for Schooling in Australia to take account of the impact of social, economic and technological changes on schools (Spring, 1998). Representing Commonwealth, state and territory education agencies, as well as the Catholic and independent sectors, an 11-member taskforce was appointed in June 1997. The taskforce members consulted their constituencies, and produced a revised draft in December 1997.

Goals were included in a second revised draft, and targets related to the goals were identified from a search of decisions referring to outcomes endorsed since 1994.

Following review by key interest groups, a third revised draft was produced and approved by the Ministerial Council on Education, Employment, Training and Youth Affairs in April 1998.

Common and Agreed National Goals for Schooling in Australia

1. *To provide an excellent education for all young people, being one which develops their talents and capacities to full potential, and is relevant to the social, cultural and economic needs of the nation.*
2. *To enable all students to achieve high standards of learning and to develop self-confidence, optimism, high self-esteem, respect for others, and achievement of personal excellence.*
3. *To promote equality of educational opportunities, and to provide for groups with special learning requirements.*
4. *To respond to current and emerging economic and social needs of the nation, and to provide those skills which will allow students maximum flexibility and adaptability in their future employment and other aspects of life.*
5. *To provide a foundation for further education and training, in terms of knowledge and skills, respect for learning and positive attitudes for long-life education.*
6. *To develop in students:*
 - *the skills of English literacy, including skills in listening, speaking, reading and writing;*
 - *skills of numeracy, and other mathematical skills;*
 - *skills of analysis and problem solving;*
 - *skills of information processing and computing;*
 - *an understanding of the role of science and technology in society, together with scientific and technological skills;*
 - *a knowledge and appreciation of Australia's historical and geographic context;*
 - *a knowledge of languages other than English;*
 - *an appreciation and understanding of, and confidence to participate in, the creative arts;*
 - *an understanding of, and concern for, balanced development and the global environment; and*
 - *a capacity to exercise judgement in matters of morality, ethics and social justice.*
7. *To develop knowledge, skills, attitudes and values which will enable students to participate as active and informed citizens in our democratic Australian society within an international context.*
8. *To provide students with an understanding and respect for our cultural heritage including the particular cultural background of Aboriginal and ethnic groups.*
9. *To provide for the physical development and personal health and fitness of students, and for the creative use of leisure time.*
10. *To provide appropriate career education and knowledge of the world of work, including an understanding of the nature and place of work in our society.*

National Goals for Schooling in the Twenty-First Century

Preamble

Australia's future depends upon each citizen having the necessary knowledge, understanding, skills, and values for a productive and rewarding life in an educated, just and open society. High quality schooling is central to achieving this vision.

This statement of national goals for schooling provides broad directions to guide schools and education authorities in securing these outcomes for students. It acknowledges the capacity of all young people to learn, and the role of schooling in developing that capacity. It also acknowledges the role of parents as the first educators of their children and the central role of teachers in the learning process.

Schooling provides a foundation for young Australians' intellectual, physical, social, moral, spiritual and aesthetic development. By providing a supportive and nurturing environment, schooling contributes to the development of students' sense of self-worth, enthusiasm for learning and optimism for the future.

Governments set the public policies that foster the pursuit of excellence, enable a diverse range of educational choices and aspirations, safeguard the entitlement of all young people to high quality schooling, promote the economic use of public resources, and uphold the contribution of schooling to a socially cohesive and culturally rich society.

Common and agreed goals for schooling establish a foundation for action among State and Territory governments with their constitutional responsibility for schooling, the Commonwealth, non-government school authorities and all those who seek the best possible educational outcomes for young Australians, to improve the quality of schooling nationally.

The achievement of these common and agreed national goals entails a commitment to collaboration for the purposes of:

- further strengthening schools as learning communities where teachers, students and their families work in partnership with business, industry and the wider community*
- enhancing the status and quality of the teaching profession*
- continuing to develop curriculum and related systems of assessment, accreditation and credentialling that promote quality and are nationally recognised and valued*
- increasing public confidence in school education through explicit and defensible standards that guide improvement in students' levels of educational achievement and through which the effectiveness, efficiency and equity of schooling can be measured and evaluated.*

These national goals provide a basis for investment in schooling to enable all young people to engage effectively with an increasingly complex world. This world will be characterised by advances in information and communication technologies, population diversity arising from international mobility and migration, and complex environmental and social challenges.

National Goals for Schooling in the Twenty-First Century

The achievement of the national goals for schooling will assist young people to contribute to Australia's social, cultural and economic development in local and global contexts. Their achievement will also assist young people to develop a disposition towards learning throughout their lives so that they can exercise their rights and responsibilities as citizens of Australia.

Goals

1. *Schooling should develop fully the talents and capacities of all students. In particular, when students leave school they should:*
 - 1.1 *have the capacity for, and skills in, analysis and problem solving and the ability to communicate ideas and information, to plan and organise activities and to collaborate with others.*
 - 1.2 *have qualities of self-confidence, optimism, high self-esteem, and a commitment to personal excellence as a basis for their potential life roles as family, community and workforce members.*
 - 1.3 *have the capacity to exercise judgement and responsibility in matters of morality, ethics and social justice, and the capacity to make sense of their world, to think about how things got to be the way they are, to make rational and informed decisions about their own lives and to accept responsibility for their own actions.*
 - 1.4 *be active and informed citizens with an understanding and appreciation of Australia's system of government and civic life.*
 - 1.5 *have employment related skills and an understanding of the work environment, career options and pathways as a foundation for, and positive attitudes towards, vocational education and training, further education, employment and life-long learning.*
 - 1.6 *be confident, creative and productive users of new technologies, particularly information and communication technologies, and understand the impact of these technologies on society.*
 - 1.7 *have an understanding of, and concern for, stewardship of the natural environment, and the knowledge and skills to contribute to ecologically sustainable development.*
 - 1.8 *have the knowledge, skills and attitudes necessary to establish and maintain a healthy lifestyle, and for the creative and satisfying use of leisure time.*
2. *In terms of curriculum, students should have:*
 - 2.1 *attained high standards of knowledge, skills and understanding through a comprehensive and balanced curriculum in the compulsory years of schooling encompassing the agreed eight key learning areas: the arts; English; health and physical education; languages other than English; mathematics; science; studies of society and environment; technology and the interrelationships between them.*

National Goals for Schooling in the Twenty-First Century

- 2.2 *attained the skills of numeracy and English literacy; such that, every student should be numerate, able to read, write, spell and communicate at an appropriate level.*
- 2.3 *participated in programs of vocational learning during the compulsory years and have had access to vocational education and training programs as part of their senior secondary studies.*
- 2.4 *participated in programs and activities which foster and develop enterprise skills which will allow them maximum flexibility and adaptability in the future.*
- 3. *Schooling should be socially just, so that:*
 - 3.1 *students' outcomes from schooling are free from the effects of negative forms of discrimination based on sex, language, culture and ethnicity, religion or disability; and of differences arising from students' socio-economic background or geographic location.*
 - 3.2 *the learning outcomes of educationally disadvantaged students improve and, over time, match those of other students.*
 - 3.3 *Aboriginal and Torres Strait Islander students have equitable access to, and opportunities in, schooling so that their learning outcomes improve and, over time, match those of other students.*
 - 3.4 *all students understand and acknowledge the value of Aboriginal and Torres Strait Islander cultures to Australian society and possess the knowledge, skills and understanding to contribute to and benefit from, reconciliation between indigenous and non-indigenous Australians.*
 - 3.5 *all students understand and acknowledge the value of cultural and linguistic diversity, and possess the knowledge, skills and understanding to contribute to, and benefit from, such diversity in the Australian community and internationally.*
 - 3.6 *all students have access to the high quality education necessary to enable the completion of school education to Year 12 or its vocational equivalent and that provides clear and recognised pathways to employment and further education and training.*

This draft was released with a consultation paper in May 1998 for a six-month public review. The task force revised the draft on the basis of formal submissions received from 167 organisations and four individuals, as well as other informal responses. In April 1999, the Ministerial Council on Education, Employment, Training and Youth Affairs adopted the final draft, which was released as the National Goals for Schooling in the Twenty-First Century.

8.4 Roles of National Organisations

Five national organisations were involved in national curriculum collaboration. The Australian Education Council, later enlarged in June 1993 to become the Ministerial Council on Education, Employment, Training and Youth Affairs, formed the key policy-making body. The Conference of Education System Chief Executive Officers, later reorganised in July 2001 as the Australian Education Systems Officials Committee, coordinated collaboration on national education and training initiatives. Legislation in 1988 led to a major restructure of federal education agencies with the merging of the Commonwealth Schools Commission and the Commonwealth Tertiary Education Commission within an enlarged Commonwealth Department of Employment, Education and Training. Following the election of the Liberal-National coalition government in March 1996, the department was enlarged to form the Commonwealth Department of Employment, Education, Training and Youth Affairs headed by Dr David Kemp. As a result of a reshaping of the cabinet after the federal election in October 1998, the department was renamed the Commonwealth Department of Education, Training and Youth Affairs. Due to ministerial changes following the federal election in November 2001, the department became known as the Australian Government Department of Education, Science and Training headed by Dr Brendan Nelson. The Australian Government Department of Education, Science and Training undertook an important role in funding initiatives and providing professional development to implement the national statements and profiles. The Curriculum Corporation became the main agency involved in developing the national statements and profiles. Education.Au collaborated with the Curriculum Corporation in designing the [Le@rning](#) Federation.

8.4.1 Australian Education Council

A permanent council of the Commonwealth and state ministers for education, the Australian Education Council (AEC), was formed in 1936. Spaul (1987) reported that the immediate objective for forming AEC was to provide a means for state education agencies to approach the Commonwealth government to provide financial assistance for technical education. However, AEC soon acquired as its main role one of providing a forum for the states on educational issues, prior to going into a long recess between 1946 and 1958. AEC was revived in 1958 to approach the Commonwealth government to provide financial assistance for public education. This prompted AEC to conduct two surveys of educational needs during the 1960s, which failed to convince the Commonwealth government that urgent action was required. During the 1970s, AEC reformed its own organisation to become a predominant force in policy-making. In 1972, the Commonwealth Minister was admitted to AEC as a full member, an AEC Secretariat was established in 1978, an Executive Committee in 1980, and working parties were widely used to increase its role in policy formulation.

This new capacity led AEC to become the key policy body in setting the national agenda for educational reform as the ministers for education under the leadership of the Commonwealth Minister, John Dawkins, asserted their predominance (Bartlett et al., 1994; Lingard et al., 1995). In 1986, the Executive Committee established a committee of directors of curriculum to examine national collaboration in curriculum development. The Commonwealth Minister, together with the state Labor ministers from Victoria and South Australia, had secured control of this agenda by July 1988. The fifty-eighth meeting of AEC agreed to the exercise of 'mapping the curriculum', and preparing a statement on Common and Agreed National Goals for Schooling in Australia. Following review of the draft statement at the fifty-ninth meeting of AEC in October 1988, the Common and Agreed National Goals for Schooling in Australia and a schedule for 'mapping the curriculum' were adopted at the sixtieth meeting of AEC in April 1989. In 1990, a council of Ministers for Vocational Education, Employment and Training (MOVEET) was appointed, and met jointly with AEC for the first time at the sixty-sixth meeting in October 1991.

8.4.2 Ministerial Council on Education, Employment, Training and Youth Affairs

In June 1993, the Council of Australian Governments amalgamated several ministerial councils in order to optimise coordination of policy matters across portfolios. In January 1994, a new council, the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA), subsumed AEC, MOVEET and the Youth Ministers' Council. MCEETYA was formally established with the ministers for education, employment, training and youth affairs from the Commonwealth, the Australian states and territories, together with ministers from New Zealand being given full membership, whilst associate membership was given to ministers from Papua New Guinea and Norfolk Island.

At its twelfth meeting in July 2001, MCEETYA formed a new structure of seven task forces. These focused on school resources, teacher quality and educational leadership, student learning and support services, information and communication technologies in schools, indigenous and other targeted initiatives of national significance, transition from school, and performance measurement and reporting to ensure achievement of the National Goals for Schooling in the Twenty-First Century.

8.4.3 Australian Education Systems Officials Committee

At its twelfth meeting in July 2001, MCEETYA formed the Australian Education Systems Officials Committee (AESOC) to integrate the work of MCEETYA's Standing Committee of Officials and the Conference of Education System Chief Executive Officers (CESCEO). AESOC comprises of the chief executive officers of all Commonwealth, state and territory education agencies and vocational education and training authorities. AESOC played a pivotal role in coordinating collaboration on national education and training initiatives,

providing greater coordination of activities supporting MCEETYA, improving review processes and maintaining strategic focus for groups preparing advice for consideration by MCEETYA.

8.4.4 Commonwealth Department of Education, Science and Training

The Commonwealth Department of Education, Training and Youth Affairs gained an important role in implementing the national statements and profiles following their referral in July 1993 to the states and territories for further review. Following release of a policy statement by the Commonwealth Minister (Beazley, 1993), the federal Labor government initiated the National Professional Development Program, which required state and territory education agencies, professional associations and universities to form partnerships to bid for funds to provide professional development opportunities for teachers. Implementation of the national statements and profiles, the key competencies and vocational education courses formed the main focus for projects funded by the National Professional Development Program over three years from 1994 to 1996 under two components. The general element funded projects relating to the operational responsibilities of public, Catholic and independent sectors, and the strategic initiatives' element funded projects sponsored by professional associations and partnerships across state and territory borders, and those constituting priority areas.

In July 1995, the Commonwealth Department of Employment, Education, Training and Youth Affairs appointed an Advisory Committee of representatives from interest groups sponsoring projects to assist National Curriculum Services, which had been contracted to conduct a mid-term evaluation of the National Professional Development Program. Between August and November of 1995, an evaluation team collected data by interviewing Commonwealth Department of Employment, Education, Training and Youth Affairs officials, state and territory management groups, project officers from a sample of National Professional Development Program projects, and delegates attending a conference convened to review the program. Reporting on its appropriateness, efficiency and effectiveness, National Curriculum Services (1995) concluded that although there was a strong case for its continuation since its priorities were correct, its sustainability depended on building networks and infrastructure, and new projects should cover other areas. In spite of this recommendation, the National Professional Development Program was discontinued following the election of the federal Liberal-National coalition government in March 1996.

8.4.5 Curriculum Corporation

Established in 1990 to facilitate activities in curriculum development, publish materials, and provide curriculum information, the Curriculum Corporation subsumed the functions of the Curriculum Development Centre and the Australian Schools Cataloguing Information Service. AEC intended that the Curriculum Corporation should continue engaging in collaborative activities with other education agencies, an approach disputed by Kemmis (1990). Kemmis argued that the adoption of a centre-periphery view of curriculum

research, development and evaluation modelled on the past operations of the Curriculum Development Centre needed to be combined with pedagogical and professional development at the school level. Such an approach would provide teachers with the capacities and commitments to implement materials that support new curriculum proposals.

Governed by a Board of Directors consisting of representatives from each state and territory education agency, the Commonwealth Department of Education, Science and Training, the New Zealand Ministry of Education, the National Council of Independent Schools Associations and the National Catholic Education Commission, the Curriculum Corporation continued this approach. Over the first decade of its operation, the Curriculum Corporation undertook projects for Commonwealth, state and territory education agencies, as well as bringing together other organisations to form consortia. Its activities concentrated on developing resources for civics and citizenship education, Asian languages and studies, vocational education, and Aboriginal and Torres Strait Islander studies, providing a cataloguing service for school libraries, and offering career information through a searchable database.

8.4.6 Education.Au

Established in 1997 to develop and manage on-line services for Australia's educational systems, Education.Au is operated by a Board of Directors on behalf of the Commonwealth, state and territory ministers for education and training. During its initial period of operation, Education.Au designed the Education Network Australia, collaborated with the Curriculum Corporation in designing the [Le@rning](#) Federation, developed myfuture, an on-line career information service launched in July 2002, and collaborated with the National Office of the Information Economy in designing the Government Education Portal.

8.5 National Curriculum Collaboration

8.5.1 Development of the National Statements and Profiles

The process of national curriculum collaboration that led to the development of the national statements and profiles has been viewed from several perspectives in published literature. Interpretations of policy-making involved in national curriculum collaboration during this period contrasted the doctrine of corporate federalism with the states' rights position adopted by the states and territories (Bartlett, 1992; Bartlett et al., 1994; Lingard et al., 1995). Marsh (1994) asserted that the authority innovation decision-making model of curriculum change, whereby decisions were made by superordinate groups and carried out by subordinate groups, was applicable to the process of developing the national statements

and profiles. Ellerton and Clements (1994) argued that the application of an outcome-based approach to develop the Mathematics profile led to an instrument that was deficient in measuring student progress, attributing this shortcoming to the lack of consultation. Piper (1997) concluded that the process of national curriculum collaboration precipitated tensions between the maintenance of national cohesion and fragmentation due to the constraints of the federal system and ideological differences between groups.

The first initiative in the strategy for national collaboration in curriculum development occurred at a conference of chief executive officers from all state and territory education agencies held in September 1986, at which a paper was presented drawing attention to duplication, variable quality and escalating costs of curriculum activities. This led to the assignment of a working group of directors of curriculum to identify areas of common interest, collaborative procedures, potential costs, and time frames for national collaboration in curriculum development. In 1987, AEC agreed to proceed in this direction, and the working group of directors of curriculum continued its work.

Commencing in July 1988, AEC initiated a two-phase process, referred to as 'mapping the curriculum', as part of a broader AEC National Collaboration in Curriculum Program. The first phase, mapping the general curriculum, was applied to document curriculum policies operating in each state education system. The results of this study showed that, whilst similar subject areas were offered in both primary and secondary levels of each system, there was considerable diversity in subject content, teaching styles and allocation of teaching time. It also showed considerable variation in the designation of core and elective subjects between different systems, although a core curriculum was identified for six subjects: English; mathematics; science; social studies; the arts; and health and physical education. The second phase, mapping specific subject areas, identified differences in content and processes between education systems. Research reports, policy statements and strategies, guidelines and frameworks, syllabuses, courses and units of work, curriculum materials, assessment instruments, parent and community documents, and teacher development programs in each subject were screened to identify these differences. Brewer and Francis (1990) identified alacrity, reliance on centralised curriculum efforts, and lack of consultation with teachers as important limitations in the approach applied in these early activities of 'mapping the curriculum'.

The process of 'mapping the curriculum' provided the foundations for developing national statements, defining the learning area and outlining essential understanding and skills. Each national statement organises knowledge, skills and processes by strands over four bands. Band A equates to grades 1 to 4, Band B equates to grades 4 to 7, Band C equates to grades 7 to 10, and Band D equates to grades 11 and 12. Also in 1988, AEC formed a

working party to develop a discussion paper for a national approach to monitoring student achievement, which was presented in mid-1990. It recommended that profiles, describing the progression of learning outcomes typically achieved by students through grades 1 to 10, should be specified according to eight levels of achievement. As well as level statements, each profile includes three other components. Outcomes describe in progressive order the understanding and skills that students typically acquire. Pointers are indicators of student achievement of an outcome. Annotated work samples show student work, which demonstrates the achievement of one or more outcomes at a level. In December 1990, AEC contracted the Australasian Cooperative Assessment Program to develop profiles in each learning area presenting outcomes and pointers for eight levels across grades 1 to 10.

A project to develop a national statement for Mathematics, initiated by AEC, was conducted from late in 1988 as a pilot study (Brewer, 1991; Willis and Stephens, 1991; Ellerton and Clements, 1994). The development of the national statement for Mathematics was undertaken by a project team supported by a reference group and consultants, and guided by a steering committee of the directors of curriculum with management and support provided by the New South Wales Department of Education. The project involved four consecutive stages. First, policy documents and materials for mathematics were identified and screened, and the information was synthesised to form a 'map', which was released by AEC in March 1990. Second, the national statement was prepared during 1990 and 1991. Third, the national statement was disseminated. Fourth, the profile was prepared, trialed and published. Following their reference to AEC, the national statement (Curriculum Corporation, 1991a), a guide for parents and the community (Curriculum Corporation, 1991b), and the profile (Curriculum Corporation, 1994a) for Mathematics were published.

A National Statement on Mathematics for Australian Schools consists of two parts. The first part, *Principles for School Mathematics*, defines the nature and significance of mathematics and specifies student groups, who could gain from the study of mathematics, explicates the goals of mathematics, and analyses the research basis, principles and conditions affecting student learning. The second part, the *Scope of the Mathematics Curriculum*, categorises the content of the Mathematics curriculum into eight strands: attitudes and appreciations; mathematical inquiry; choosing and using mathematics; space; number; measurement; chance and data; and algebra. *A National Statement on Mathematics for Australian Schools* states that teachers should use a variety of print materials, indicating that no single material available is likely to cater for the needs of all students. The need to apply criteria for selecting materials is stated, and attention is drawn to screening materials for racist and sexist biases, controversial issues, which may offend particular groups, and readability. In Band A, teachers should use concrete materials to develop mathematical skills, knowledge

and processes. In Band B, teachers should continue to use concrete materials, but should also introduce mathematical skills, knowledge and processes through newspapers, magazines, text materials, and computer programs. In Bands C and D, teachers should use concrete materials, encyclopedias, yearbooks, newspapers, magazines, text materials, and computer programs.

The success of the pilot study led AEC to initiate similar activities under the direction of the directors of curriculum in Science, Technology, English, and the Study of Society and Environment. The first stage in developing a national statement for Science was commenced in 1990 with the 'map' indicating that the national statement should use an approach linking science with technology in a social context, and emphasise the professional development of science teachers. The second stage of preparing the national statement was begun late in 1990 and completed in late 1992. The third stage of preparing and trialing the profile was also completed late in 1992. Following their reference to AEC in July 1993, the national statement (Curriculum Corporation, 1994b) and the profile (Curriculum Corporation, 1994c) for Science were then published, and disseminated within each state and territory in 1994.

A Statement on Science for Australian Schools consists of two parts. The first part defines the goals of science education, explains the principles for effective learning experiences in science, defines key science curriculum principles for curriculum developers, and defines the contexts for learning science. The second part categorises the content of the Science curriculum into five strands: working scientifically; Earth and beyond; energy and change; life and living; and natural and processed materials. In Band A, teachers should use books, films and pictures. In Band B, teachers should use films, television and computer programs, as well as books. In Band C, teachers should use a wider range of print materials to encourage students to research information concerning scientific topics. In Band D, specific subject syllabuses offered by accreditation agencies should guide teachers, when selecting appropriate materials.

The first stage in developing a national statement for Technology was also commenced in 1990 with the 'map' indicating that systems were producing resources in different areas with little overlap. The second stage of preparing the national statement was begun late in 1990 and completed in late 1992. The third stage of preparing and trialing the profile was also completed late in 1992. Following their reference to AEC in July 1993, the national statement (Curriculum Corporation, 1994d) and the profile (Curriculum Corporation, 1994e) for Technology were then published, and disseminated within each state and territory in 1994.

A Statement on Technology for Australian Schools consists of two parts. The first part describes the role of technology in society, the importance of technology, the place of technology in the curriculum, and the importance of technology for all students. The second part categorises the content of the Technology curriculum into four strands: designing, making and appraising; information; materials; and systems. In Band A, teachers should use materials, which present sketches, plans, diagrams, models and charts. In Band B, teachers should use diagrams, drawings, simulations, models, manuals and reference materials. In Band C, teachers should use manuals and computer programs, and reference materials. In Band D, specific subject syllabuses offered by accreditation agencies should guide teachers, when selecting appropriate materials.

Beginning in 1990, the first stage in developing a national statement for English commenced with the 'map' identifying that curriculum provisions across systems were consistent. The second stage of preparing the national statement was undertaken between late 1990 and mid-1992. The third stage of preparing and trialing the profile was undertaken in 1991, and completed late in 1992. Following their reference to AEC in July 1993, the national statement (Curriculum Corporation, 1994f) and the profile (Curriculum Corporation, 1994g) for English were then published, and disseminated within each state and territory in 1994.

A Statement on English for Australian Schools consists of two parts. The first part explicates the goals of the English curriculum, defines literacy, specifies the characteristics of standard Australian English, and presents a philosophy for learning English. The second part categorises the content of the English curriculum into two strands: texts; and language. It classifies texts into three broad categories. Literature includes picture books, traditional stories, novels, feature films, short stories, plays, poetry, newspaper articles, translated works, students' writings, biographies, and filmed documentaries. Mass media includes television, video, print, computer software, and radio. Everyday texts are those associated with daily life, specialised demands of schooling, and the world of work. It analyses language according to contextual understanding, linguistic structures and features, and presents strategies for speaking and listening, reading and viewing, and writing. In Band A, teachers should use stories, poems, plays, short films, fiction and non-fiction books in literature studies. In Band B, teachers should use stories, poems, plays and novels in literature studies. In Band C, teachers should use contemporary novels and short stories, poetry, contemporary and classic plays, and contemporary feature films in literature studies. In Band D, specific subject syllabuses offered by accreditation agencies should guide teachers, when selecting appropriate materials. At this level, teachers should use a wide range of literature, emphasising works written by Australians, to encourage students to interpret their construction and themes.

The first stage in developing a national statement for the Study of Society and Environment was commenced in mid-1990 through negotiation with the states and territories, because the learning area was organised in a different way. The 'map' indicated that curriculum programs, including both professional and student components, should be developed for environmental education, Aboriginal and Torres Strait Islander studies, Asian and Pacific studies, and political and cultural studies. The second stage of preparing the national statement was undertaken between late 1990 and mid-1993, although its development did not proceed smoothly. In October 1992, the AEC Curriculum and Assessment Committee dismissed the original five-member project team, consisting of representatives from the Queensland Department of Education and the Australian Federation of Societies for the Studies of Society and Environment. Commentators reported that this action was justified on the grounds of the radical ideological perspectives that the team had presented in the national statement (Gilbert et al., 1992; Hoepper, 1993). The third stage of preparing and trialing the profile was also completed in mid-1993. Following their reference to AEC in July 1993, the national statement (Curriculum Corporation, 1994h) and the profile (Curriculum Corporation, 1994i) for the Study of Society and Environment were then published, and disseminated within each state and territory in 1994.

A Statement on Studies of Society and Environment for Australian Schools consists of two parts. The first part defines the nature and purpose of studies of society and environment, defines outcomes, specifies essential learning about Australia, describes the role of values, defines seven curriculum perspectives, and specifies inclusion of all student groups. The second part categorises the content of the Studies of Society and Environment curriculum into six strands: investigation, communication, and participation; time, continuity, and change; place and space; culture; resources; and natural and social systems. In Band A, teachers should use stories, maps and photographs. In Band B, teachers should extend the range of media used in their classrooms to include texts, atlases, encyclopedias, yearbooks, videotapes, and audiotapes. In Band C, teachers should use the full range of print and audiovisual materials. In Band D, specific subject syllabuses offered by accreditation agencies should guide teachers, when selecting appropriate materials.

The lack of coordination between the respective groups managing the development of the national statements and profiles led AEC in August 1991 to appoint the AEC Curriculum and Assessment Committee to coordinate the management bodies working in each learning area. These comprised of three main groups: a project team of three or four members; a steering committee of directors of curriculum; and a national reference group, which consulted with various interest groups. The AEC Curriculum and Assessment Committee also refined the three stages of the developmental process (Curriculum Corporation, 1994j).

In some instances, a preliminary stage, which involved surveying and screening available materials and research documents, preceded the first stage. The first stage involved preparing a brief to define the learning area, and to direct the writing of the statement and profile. The second stage involved preparing and writing the national statement, which identified the content in each learning area and provided a conceptual framework of the main knowledge and skills for curriculum developers to develop curriculum guides. The third stage involved publishing the national statements, preparing, validating and publishing the national profiles, and identifying, preparing and producing professional materials to support the implementation of the national statements and profiles (Brewer, 1992; Hannan and Wilson, 1992). A schedule was also delineated for completing the publication of briefs, as well as statements and profiles in each learning area by mid-1993.

The new process, defined by the AEC Curriculum and Assessment Committee, was applied to develop national statements for the remaining three learning areas: Health and Physical Education; the Arts; and Languages other than English. The first stage in developing a national statement for Health and Physical Education was commenced late in 1991 with a literature review followed by a brief, which was completed in mid-1992. The second stage of preparing the national statement was undertaken between late 1992 and mid-1993. The third stage of preparing and trialing the profile was also completed by mid-1993. Following their reference to AEC in July 1993, the national statement (Curriculum Corporation, 1994k) and the profile (Curriculum Corporation, 1994l) for Health and Physical Education were then published, and disseminated within each state and territory in 1994.

A Statement on Health and Physical Education for Australian Schools consists of two parts. The first part defines the key principles and values of health and physical education, and explicates the goals of health and physical education. The second part categorises the content of the Health and Physical Education curriculum into three strands: communication, investigation, and application; human functioning and physical activity; and community structures and practices. In Bands A and B, teachers should use reading materials. In Band C, teachers should use a wider range of print materials. In Band D, specific subject syllabuses offered by accreditation agencies should guide teachers, when selecting appropriate materials.

The first stage in developing a national statement for the Arts was commenced late in 1991 with a literature review followed by a brief, which was completed in mid-1992. The second stage of preparing the national statement was undertaken between late 1992 and mid-1993. The third stage of preparing and trialing the profile was also completed by mid-1993. Following their reference to AEC in July 1993, the national statement (Curriculum

Corporation, 1994m) and the profile (Curriculum Corporation, 1994n) for the Arts were then published, and disseminated within each state and territory in 1994.

A Statement on Arts for Australian Schools consists of two parts. The first part specifies five key arts forms, defines and analyses the arts, describes approaches to learning in the arts, and specifies cross-curricular perspectives. The second part categorises the content of the Arts curriculum into five strands: dance; drama; media; music; and visual arts. In Band B, teachers should use plays, and reading materials. In Band C, teachers should use a wider range of print materials. In Band D, specific subject syllabuses offered by accreditation agencies should guide teachers, when selecting appropriate materials.

The first stage in developing a national statement for Languages other than English was commenced late in 1991 with a brief, which was completed in mid-1992. The second stage of preparing the national statement was undertaken between late 1992 and mid-1993. The third stage of preparing and trialing the profile was also completed by mid-1993. Following their reference to AEC in July 1993, the national statement (Curriculum Corporation, 1994o) and the profile (Curriculum Corporation, 1994p) for Languages other than English were then published, and disseminated within each state and territory in 1994.

A Statement on Languages other than English for Australian Schools consists of two parts. The first part defines student groups, learning experiences, outcomes, entry points, providers, types of programs, modes of delivery, provisions for Aborigines and Torres Strait Islanders, the role of Australian Sign Language for the deaf in languages other than English. The second part categorises the content of the Languages other than English curriculum into three strands: oral interaction; reading and responding; and writing. In Band A, teachers should use posters, big books, and simple storybooks. In Band B, teachers should use charts, posters, maps, stories, and poems. In Band C, teachers should use magazines, newspapers, stories, plays and poems. In Band D, specific subject syllabuses offered by accreditation agencies should guide teachers, when selecting appropriate materials. However, teachers could use novels, short stories, extracts from magazines and newspapers, poetry, as well as feature films.

Boston (1993) reported that development of the national statements and profiles represented the most significant collaborative activity in Australian education. It involved thousands of teachers preparing documents, consultations with more than 250 organisations, trials using 300 teachers in 60 schools for the statements and trials using 70,000 students for the profiles, and a validation process conducted by the Australian Council for Educational Research (ACER) using 1,600 teachers and 20,000 students. Francis

(1993) reported that the national statements and profiles for each of the eight learning areas were completed in June 1993, and then referred to AEC for approval.

8.5.2 Professional Responses and Adoption

The national statements and profiles, however, became controversial before their approval. Following a forum held by the Australian Mathematical Sciences Council (AMSC) in April 1993, a group of mathematicians from the University of Melbourne led by Professor Tony Gutfmann developed a petition. It was sent to Victoria's recently appointed Minister for Education, Don Hayward, and circulated by electronic mail to mathematicians, statisticians and mathematics educators across Australia. In May 1993, the petition, signed by almost 400 academics, cited the Mathematics profile to be substantially flawed. Late in May 1993, Minister Hayward called a meeting to consider the academics' criticisms, which led to the formation of a seven-member Advisory Committee to review the Mathematics profile. In its report to the Minister in June 1993, the Advisory Committee presented six recommendations referring to the Mathematics profile. It should not be adopted. It was unsuitable for making comparisons between different groups. It should be subjected to a national review. A revision may be suitable for reporting on student transfers to other schools. A revision may be suitable for reporting to parents. A national review group should formulate a procedure to ensure that expert advice is obtained in future national projects in mathematics. At the same time, the Australian Institute of Physics, the Royal Australian Chemical Institute and the Australian Academy of Science found the Science statement to be academically impoverished by failing to treat the sciences as separate disciplines. Although the AEC Curriculum and Assessment Committee responded by issuing a refutation of assertions by the mathematics academics and meeting with representatives from the three science associations, it failed to quell the criticism.

In July 1993, AEC and MOVEET convened a meeting at Perth, Western Australia, when the national statements and profiles, and the employment-related key competencies were reviewed. At a prior meeting, the ministers from the non-Labor states and territories, who commanded a majority of 5 to 4, agreed to block adoption of the national statements and profiles, and the employment-related key competencies. In the meeting, the ministers from New South Wales, Victoria, Western Australia, Tasmania, and the Northern Territory opposed their adoption. This action forced AEC and MOVEET to take a decision to refer the national statements and profiles, and the employment-related key competencies to the states and territories for further review involving consultation with their own educational communities to determine whether the initiatives should proceed. This decision was followed by considerable debate in the press and news media, which stressed the division between the Labor and non-Labor ministers in reaching a decision. The objections raised by the non-Labor states were based on fears that a prescriptive national curriculum could

override states' rights in education, as well as specific criticisms about the quality of the national statements and profiles.

Soon after announcement of this decision, Kim Beazley, the Commonwealth Minister for Employment, Education and Training, and Ross Free, the Commonwealth Minister for Schools and Vocational Education and Training asserted that federal funds would be used to promote the national statements and profiles. At a meeting of the National Education Forum held in August 1993, Minister Free announced that the recently approved National Professional Development Program would be used to fund subject associations in the eight leaning areas. Furthermore, the Commonwealth government reached an accord with the Australian Education Union to support the national statements and profiles in exchange for an enterprise bargaining agreement, and funded the newly established Australian Teaching Council to conduct summer institutes for teachers to gain expertise relating to the national statements and profiles.

However, the dispute between the respective groups supporting and opposing adoption of the national statements and profiles widened. In August 1993, the Australian Vice-Chancellors Committee recommended that an independent body should review the eight national profiles and further development of the national statements and profiles should be entrusted to ACER. In November 1993, the Business-Higher Education Round Table, established in November 1990 as a forum for business executives and vice-chancellors from institutions of higher education to exchange views and promote joint initiatives, supported the view that ACER should review the national statements and profiles. AMSC also continued its opposition to the Mathematics profile, and obtained a concession from Minister Free, who indicated at a meeting with AMSC representatives in November 1993, that he would support reviews of the Mathematics and Science profiles at the forthcoming AEC meeting in December 1993. Having taken a weaker stand than other mathematics associations against the Mathematics profile, the Australian Association of Mathematics Teachers (AAMT) submitted a report suggesting that if a review of the Mathematics profile was recommended it should be undertaken by member associations of AMSC.

It seems by the time of the meeting of AEC in December 1993 that Ministers Beazley and Free had concluded that the best way of gaining the support of the non-Labor ministers lay with offering support for a national review of the national statements and profiles. The meeting, however, endorsed a motion from Virginia Chadwick, the New South Wales Minister for Education, Training and Youth Affairs, calling for greater cooperation between the states and territories on curriculum issues. This allowed Minister Beazley to withdraw a proposal calling for the states and territories to support a national review of the national statements and profiles. The meeting also agreed that the Curriculum Corporation should

coordinate the collection of information from the states and territories about the adoption and implementation of the national statements and profiles.

The compromise reached at this meeting effectively undermined the attempt by mathematics associations and academics to have the national statements and profiles reviewed, because it shifted the initiative for curriculum collaboration to the states and territories. However, opposition continued in a diminished form when the Business-Higher Education Round Table reiterated its opposition in September 1994 to the adoption of the national statements and profiles. This decision followed a review of the national statements and profiles by an expert group representing the Round Table, the Australian Academy of Science, and the Australian Academy of Technological Sciences and Engineering. Devolution of decision-making about the use of the national statements and profiles to the states and territories, however, meant that these groups found it more difficult to direct their criticisms to a particular organisation responsible for curriculum collaboration.

8.5.3 Implementation

Funds provided through the National Professional Development Program led several subject associations to form new consortia, representing key learning areas, to coordinate among other activities the dissemination and implementation of the national statements and profiles (Cumming, 1993; Kennedy, 1995).

In outlining activities relating to the national statement and profile for Mathematics, Stephens and Reeves (1993) reported that AAMT commenced a three-year program of professional development in 1991, published an information kit in 1992, presented a series of eight workshops and completed a review of the national statement in 1993.

The Australian Science Teachers Association (ASTA) developed a professional development program consisting of 20 workshops intended to facilitate implementation of the national statement and profile for Science. In 1995, state and territory branches of ASTA trained facilitators to implement the program, which could be modified to meet local needs.

In 1990, the Australian Association for the Teaching of English, the Australian Council for Adult Literacy, the Australian Council of TESOL Associations, the Australian Literacy Educators' Association, and the Primary English Teaching Association formed the Australian Literacy Federation (ALF). During 1993 and 1994, ALF examined the implementation of the national statement and profile for English (Meiers, 1994). ALF also facilitated the work of another National Professional Development Program-funded

project, Literacy in the National Curriculum, in which the Darling Downs Council of the Australian Literacy Educators' Association and the University of Southern Queensland developed eight professional development modules and formed a network across Queensland (Kempe, 1996).

Kirk (1996) reported that a consortium of education agencies, universities and professional associations conducted a National Professional Development Program-funded project to assist teachers implement the national statement and profile for Health and Physical Education. Commencing in 1994 with school-based activities in 490 schools in Victoria and Queensland involving action research, the project then extended in 1995 to involve professional development activities aimed at renewing teachers' knowledge in the discipline, whilst in 1996 a set of professional development modules was developed and trialed.

In 1989, the Australian Dance Council, the Australian Institute of Art Education, the Australian Society for Music Education, the Council of Australasian Media Education Organisations, the Design in Education Council of Australia, and the National Association for Drama in Education formed the National Affiliation of Arts Educators (NAAE). In 1994, NAAE established the Australian Centre for Arts Education at the University of Canberra to create a network for arts educators and convene a national conference. From 1994 to 1996, NAAE undertook a professional development program for secondary teachers to support implementation of the national statement and profile for the Arts, and produced student work samples in collaboration with the Curriculum Corporation.

Tognini (1995) reported that the NLLIA Centre for Professional Development in Language Education in Edith Cowan University at Perth, Western Australia, coordinated a National Professional Development Program-funded project. Twelve teachers, six specialists in languages other than English and six in English-as-a-second-language, were trained as teacher facilitators to assist local educators implement the national statement and profile for Languages other than English.

8.5.4 Forum on National Statements and Profiles in Australian Schools

Meeting in July 1996, MCEETYA endorsed an offer made in December 1995 by John Aquilina, the New South Wales Minister for Education and Training, to convene a national forum to discuss issues in Australian education relating to national curriculum collaboration. Representing stakeholders, a National Forum Planning Committee organised the forum and prepared a report for MCEETYA, subsequently included in the forum proceedings published by the New South Wales Department of Training and Education Coordination (1997). Held at Sydney during October 1996, the Forum on

National Statements and Profiles in Australian Schools brought together 190 delegates. They participated in presentations on outcomes-based education and situating Australian developments within the international context, a panel discussion on developments in the states and territories, and workshops focusing on national curriculum collaboration.

Afterwards, the National Forum Planning Committee identified five key issues emerging from the forum. Support from the delegates for continuing commitment to national collaboration led the Committee to recommend that MCEETYA reconfirm its commitment to the national goals, and that the ongoing process of national collaboration involve all stakeholders and adopt realistic timelines. Support for a review of the Common and Agreed National Goals for Schooling in Australia led to a recommendation that MCEETYA should examine whether they reflect current and future educational expectations. Support for applying outcomes-based education approaches led to a recommendation that the Curriculum Corporation should provide advice to MCEETYA on ways to promote best practice in outcomes-based education. The Committee also recommended that MCEETYA should note the views of delegates about the need for professional development to support curriculum change. Support for consultation on benchmarking led to a recommendation that MCEETYA should ratify the establishment of a taskforce to consider the principles for benchmarking adopted by the forum.

8.5.5 Statements of Learning

Concerns raised by representatives of subject associations and other education organisations prompted Minister Nelson to write to state and territory ministers expressing concern about the variations in the structures, curricula and certification practices between education systems. At its thirteenth meeting in July 2002, MCEETYA commissioned the Curriculum Corporation to review curriculum provision across the Australian states and territories. In June 2003, Minister Nelson released a statement calling for state and territory governments to establish greater national consistency between education systems by 2010. At its fifteenth meeting in July 2003, MCEETYA considered the report of the review, which outlined approaches in each jurisdiction and identified common and different aspects (Curriculum Corporation, 2003). As a consequence, MCEETYA agreed to develop statements of learning setting out essential knowledge, understanding, skills and capacities for English, Mathematics, Science, and Civics and Citizenship. MCEETYA directed AESOC to develop the first Statement of Learning for English as a pilot project in 2004 (Holt et al., 2004). In June 2004, the Schools Assistance (Learning Together – Achievement through Choice and Opportunity) Bill was presented to the Australian Parliament, requiring state and territory education agencies and independent systems to implement the statements of learning by January 2008 in order to receive Commonwealth funds from 2005 to 2008. Following approval of the Statement of Learning for English by MCEETYA early in 2005,

AESOC developed the statements of learning for Mathematics, Science, and Civics and Citizenship in 2005.

8.6 Role of Materials

Implementation of the national statements and profiles led to three major efforts to define a role for materials. Beginning in 1993, the Commonwealth Department of Employment, Education, Training and Youth Affairs commissioned a consulting firm to conduct a study into factors affecting the selection of materials, and the Curriculum Corporation to develop guidelines for developers of materials. In 1997, the Commonwealth government initiated the Discovering Democracy program, intended to develop materials for civics and citizenship education by employing the research, development and diffusion model. In 1999, CESCEO commissioned the Curriculum Corporation and Education.Au to design an information system for on-line materials.

8.6.1 Guidelines for Developing Materials

8.6.1.1 Interactive Multimedia Courseware

In 1993, the Commonwealth Department of Employment, Education, Training and Youth Affairs contracted the Curriculum Corporation and the Open Learning Technology Corporation, based at Bedford Park, South Australia, to conduct a project to specify guidelines for providing advice about interactive multimedia courseware to potential purchasers and users, and courseware developers. The project involved consulting educators and experts at a National Interactive Multimedia Forum held in August 1993, and convening a reference group of experts to develop the guidelines.

Published by the Curriculum Corporation (1995), the guidelines relate to relevant international and national issues and trends, the educational benefits of interactive multimedia courseware, standards for computer hardware, and strategies for implementation. The educational guidelines are categorised into three sets of principles: enhancement of school curriculum; support for student learning; and support for teachers. The first set specifies that interactive multimedia courseware should fulfil seven requirements. It should complement existing resources, and teaching and learning approaches. It should relate to specific elements of the national statements and profiles. It should establish compatibility between design and teachers' use in educational settings across Australia. It should match the social, cultural, and educational needs of Australian students to appropriate levels. It should comply with standards for social content in relation to gender, age, ethnicity, and socio-economic status. It should support a range of extension activities. It should be appropriate to the medium. The second set specifies that interactive multimedia courseware should facilitate student learning in five ways. It

should match student readiness, rates of learning, cognitive and affective abilities, learning styles, and attainment levels. It should provide suitable modes for beginners in information technology. It should offer flexibility of use. It should apply to a wide range of learning situations. It should provide for student assessment, tracking and profiling. The third set specifies that interactive multimedia courseware should support teachers' work in five ways. It should complement and extend their teaching styles and practices. It should focus on achievement of student outcomes. It should integrate the courseware with other curriculum elements. It should manage the diversity of individual student's learning. It should deal with assessment, recording, profiling and reporting student achievement.

8.6.1.2 Curriculum Materials

In 1994, the Commonwealth Department of Employment, Education, Training and Youth Affairs funded the Curriculum Corporation to conduct a project to specify guidelines for public agencies and private organisations outside education to follow in developing materials for use in Australian schools. The project consisted of two stages. First, a consulting firm was commissioned to identify the factors affecting the selection and purchase of materials by surveying a sample of Australian schools. Second, the findings of the survey informed the development of a set of guidelines for developers and producers of materials. A Steering Committee was formed to oversee both the plan for the survey, and the outline plan for the guidelines.

Chris Cooper-Brown and Associates, a consulting firm based at Melbourne, Victoria, was contracted to conduct the survey. A nationwide area sample of 163 schools was surveyed, 136 by telephone using a standardised interview schedule, whilst the remainder were administered during school visits. Chris Cooper-Brown and Associates (1994) reported that the findings indicated similar procedures were used in schools across Australia to select materials. Curriculum coordinators were responsible for selecting materials either directly or in consultation with committees of teachers. Materials were generally procured by one of two ways: the curriculum coordinator ordered them directly; or the curriculum coordinator ordered them through the school's administrative structure. It was also found that the selection and procuring procedures were affected by pricing, terms of trade and level of service, and required information to be disseminated to other groups, such as the school's principal, teacher-librarian, school support systems, and suppliers of materials. Schools ordered materials throughout the year, rather than in particular seasons, and reported receiving free materials. The main sources of information about available materials came from word-of-mouth, mail, publishers' representatives and displays, subject associations, and professional development activities. Schools rejected materials mainly because of excessive cost, but also for bias in aspects of social content. It was found that the types of materials purchased were influenced by curriculum trends, and schools' demands

for new materials were conservative. Schools purchased materials for both student and teacher use. The medium of a material did not appear to influence its selection. It was found that the procedures for selecting and ordering materials in schools were linked. The allocation of budgets tended to reflect individual school's priorities, and thereby determined the selection and purchase of materials, which met these priorities. The cost of particular materials appeared to be an important factor in their selection and purchase, but this effect was balanced by factors relating to their quality. The predominant criteria that schools applied to select materials related to their relevance to the curriculum, whilst criteria relating to production quality and cost were of secondary importance. The degree of service was seen by schools to be an important factor in maintaining continued dealings with publishers and distributors.

The report concluded with 12 recommendations. First, developers should initiate development of materials with awareness of factors affecting the selection process. Second, free materials should be of high quality. Third, developers should track approval and rejection patterns in particular types of materials. Fourth, materials should be trialed during the developmental process. Fifth, development of materials should be supported by integrated marketing and distribution systems. Sixth, in-service training should support the implementation of materials in schools. Seventh, the use of computer-based and multimedia materials should be monitored in schools. Eighth, developers should provide efficient distribution and service for their materials. Ninth, developers should monitor competitive products and funding levels for purchasing materials to ensure good value is maintained. Tenth, developers should define the purpose and outcomes of producing materials. Eleventh, materials developed should provide for both teacher and student needs. Twelfth, the publication of materials should be timed to coincide with decision-making in the selection process.

The findings of this survey, together with expertise and information obtained from other sources, were used to develop the first draft of the guidelines. The draft was then distributed for consultation to representatives from state and territory education agencies, and other public agencies and private organisations. The guidelines were then revised according to responses received from the consultation, and presented to the Steering Committee for approval. Published by the Curriculum Corporation (1996), the guidelines consist of eight component parts titled Project Initiation, Project Development and Management, Consultation and Trialing, Content, Production, Take-Up of Materials, Curriculum in Australia, and Why Schools Purchase Materials and Why Teachers Use Them. The latter two parts do not refer to the sequence for developing materials, but form annexes, the seventh outlining the role of the national statements and profiles, and the eighth presenting a summary of the findings of the survey. The organisation of the subject

matter in each of the six parts describing the sequence is similar, providing sets of guidelines and illustrations. Each guideline is supported by one or more strategies to attain the particular guideline. Although the guidelines are presented in sequential order, users may enter the sequence at different points, follow a different sequence, or use the guidelines as a simple checklist.

The first part, which covers steps to be taken before developmental work on a material commences, consists of five guidelines. First, establish that the need exists for the proposed material. Second, identify joint work or links with other projects. Third, ensure the concept is clear. Fourth, develop an outline of the project and its products. Fifth, ensure adequate funds are available. Intended to analyse the various factors involved in organising the developmental process, the second part consists of four guidelines. First, develop a detailed time frame. Second, develop a detailed budget. Third, employ personnel with skills required for the project. Fourth, determine appropriate management processes. Intended to include scope for consultation and trialing a material, the third part consists of three guidelines. First, consult relevant authorities. Second, conduct trials with teachers and students. Third, implement ongoing consultation with users of the material. The fourth part, the key section of the Guidelines, consists of 11 guidelines. First, the material should be developed for the target audience. Second, consistency with relevant curriculum documents should be ensured. Third, the material should be related to learning outcomes. Fourth, assessment techniques should be related to teaching methods. Fifth, a range of teaching and learning techniques should be used. Sixth, teachers should be assisted to implement the techniques. Seventh, the material should reflect positively the diversity of contemporary society. Eighth, the material should include skill and value development. Ninth, the material should be free of bias. Tenth, the material should encourage use of other school resources. Eleventh, the material should encourage interaction with the wider community. Intended to improve the design of the material, the fifth part specifies three guidelines. First, employ an appropriate design. Second, choose appropriate language. Third, use a format to maximise use. Intended to improve the adoption process, the sixth part consists of three guidelines. First, initiate professional development to support implementation. Second, develop a marketing plan. Third, obtain endorsement.

8.6.2 Discovering Democracy Program

The revival of civics and citizenship education in Australian schools has been reported widely in published literature (Macintyre, 1995; Print, 1995; Boston, 1996; Pascoe, 1996; Print, 1996). A report published by the Senate Standing Committee on Employment, Education and Training (1989), which recommended that the Commonwealth government should establish a program in civics and citizenship education, represents the origins of this revival. Although a subsequent report of the Senate Standing Committee on Employment,

Education and Training (1991) acknowledged that little progress was made initially, promotion of civics and citizenship education was fired by the work of the Republic Advisory Committee and the Centenary of Federation Advisory Committee. Reports presented by the Joint Standing Committee on Migration (1994) and the Senate Legal and Constitutional Reference Committee (1995) also supported its development. The need for civics and citizenship education received enthusiastic endorsement from Prime Minister Paul Keating, who appointed the three-member Civics Expert Group in June 1994.

Charged with providing the Commonwealth government with a non-partisan program of public education on the Australian system of government, the Australian constitution and Australian citizenship, the Civics Expert Group consulted stakeholders across Australia. Responses were collected from 170 organisations and individuals, and each state and territory was visited. At the same time, Prime Minister Keating commissioned ANOP Research Services to conduct a study into the Australian community's understanding of civics' issues through an initial qualitative study with 24 focus groups followed by a nationwide survey of 2,500 subjects conducted by telephone. The findings of the survey confirmed that there was a low level of understanding across the community about Australia's system of government, but also identified a high interest and participation in civic activities. On the basis of the findings of the survey and 180 submissions received in response to the consultation, the Civics Expert Group (1994) recommended that the states and territories should make provision for a sequential program of civics education. The program should be provided across the compulsory years of schooling within the key learning area of Studies of Society and Environment. Such a program should be supported by the development of high quality materials and by the provision of professional development for teachers in civics education through a national workshop and dissemination of best practice case studies. Civics education should also be promoted in higher education by sponsoring the Open Learning Agency to develop a television program, and by listing civics education as a priority area for funding research. The Australian Committee on Training Curriculum should prepare materials for civics education at the technical and further education level. Furthermore, resource materials on civics education should be developed for study circles in adult and community education programs, and a citizenship education program should be funded through the Constitutional Centenary Foundation.

In accepting the recommendation of the Civics Expert Group for a three-month review, Prime Minister Keating also sought reactions from all state premiers and territory chief ministers in December 1994. At the conclusion of the review in March 1995, the majority of the 126 submitted responses supported the report's recommendations positively. In May 1995, Minister Beazley received support from MCEETYA to implement the report's

recommendations. In June 1995, the Commonwealth government released a full response to the report detailing funding for four components of the program. The Curriculum Corporation would develop materials over a four-year period. Professional development for teachers would be provided in consultation with the states and territories. A series of initiatives based on the recommendations for higher education, technical and further education, and adult and community education would be developed. Initiatives for the wider community, including applicants for Australian citizenship, would be developed by a steering committee.

Following the federal election in March 1996, the new Liberal and National coalition government reviewed the program initiated by the former Labor government, finding that its direction should be focused on teaching an understanding of Australia's system of government and institutions, and the principles supporting Australian democracy. As a consequence, Minister Kemp released a policy statement in May 1997, presenting a rationale for the new program to be called *Discovering Democracy* as serving six intents. First, it would provide an understanding of the development of liberal and democratic ideas, institutions and laws in other settings as they have influenced Australian developments. Second, it would outline the building of institutions and traditions in Australian democracy. Third, it would outline the responsibilities of federal, state and local government. Fourth, it would outline the roles of the legislature, executive and judiciary in government. Fifth, it would present the historical development of the constitution. Sixth, it would present the achievements of Australia's leading politicians. The Civics Expert Group, which was renamed the Civics Education Group and increased to five members, was given an enhanced role in advising on civics and citizenship education, approving new materials, and reporting to the Minister on a regular basis. The four-year program was also extended by one year until 1999-2000, and focused on grades 4 to 10.

At a preliminary stage in the developmental process, the Curriculum Corporation appointed a Civics Subcommittee to oversee the development of the new materials, whilst a national reference group and a formal consultative group of state and territory supervisors for Studies of Society and Environment were engaged in consultative roles. The development of the materials consisted of two phases. In the preparatory phase, the Civics Subcommittee met with members of the formal consultative group to gain a clear picture of the curriculum needs in each state and territory. These meetings led to the formation of a network of 160 project schools across Australia to trial the new materials, and provide case study materials documenting approaches to civics education. A survey of resources available for civics education identified some materials of high quality, which could be used as a basis for developing new materials. Position papers were commissioned on a range of topics to support the management of the project, inform the educational

community, and provide a foundation for the work of the writing teams. A scope and sequence document, derived from the national statement and profile for Studies of Society and Environment, was then developed to categorise the sequential pattern of various projects in civics education.

Early in 1997, discussions between the Civics Education Group and other consultative groups determined that the program should consist of a set of units covering four bands: middle primary; upper primary; lower secondary; and middle secondary. The scope and sequence of the 18 units across the four bands were organised according to four themes: Who Rules?, dealing with sovereignty and citizenship; Law and Rights, examining the development and nature of law; the Australian Nation, dealing with the constitutional development of Australia; and Citizens and Public Life, examining the role of citizens in political and communal life. Since some schools did not have computer hardware for accessing electronic information systems, it was decided that the materials should be produced in printed format, and to place only extension activities on CD-ROM and the Internet. As the disciplinary backgrounds of teachers involved in Studies of Society and Environment varied considerably, it was decided that a teacher's reference material should be developed.

Undertaken by teams experienced in writing for the designated bands, the writing of the units was conducted in stages. This allowed members of the Civics Education Group and officials from the Curriculum Corporation and the Commonwealth Department of Education, Training and Youth Affairs to review its progress in matching the intent of the program. This process involved briefing the writers, and requiring them to develop an outline, a consultation draft, and a final draft. At each stage, members of these groups provided responses to the writers, or Curriculum Corporation staff or new writers rewrote the drafts. The consultation draft was distributed to an Advisory Committee of representatives from the public, Catholic and independent sectors, subject associations, and parent and interest groups, as well as focus groups of teachers. Each unit was also trialed in a variety of settings, from which data on the scope and sequence of the activities were collected by a questionnaire survey. As a result of the analysis of the responses, the majority of the units were revised substantially with respect to clarity of the conceptual focus, language level and the length of the units.

The materials were distributed to every school across Australia according to a four-stage schedule. The initial stage involved distributing copies of a booklet presenting an overview of the program, the ministerial statement of May 1997, a special edition of the Curriculum Corporation's magazine focusing on civics and citizenship education, and a CD-ROM, *One Destiny*, presenting information on Federation in Australia during November 1997. The

second stage involved disseminating two multimedia materials, one for the primary level and the other for the secondary level, and the teacher's reference material (Hattensen and Holt, 1999). The third stage involved distributing four sets of readers and a poster, presenting a timeline of the growth in Australian democracy, in November 1999. In addition, a CD-ROM, *Discovering Democracy Electronically*, containing the materials and the teacher's reference material, which had been disseminated in the second stage, was distributed in 2000. To support teachers in assessing student achievement against the indicators, the fourth stage involved distributing an assessment resource for each student material in June 2000. In addition, a professional material for teachers, *Discovering Democracy through Research*, was also released.

The Discovering Democracy program was implemented in schools across Australia through various strategies, some emanating from the federal level, whilst others occurred at the state and territory level. The Commonwealth Department of Education, Training and Youth Affairs sponsored six forums convened at Canberra, ACT, in 1998, 1999, 2001, 2002, 2003 and 2004. These forums focused on exhibiting successful experiences in schools, identifying important factors influencing the success of these experiences, and determining the key issues for the future of the program. The Commonwealth Department of Education, Training and Youth Affairs also funded several national organisations to support implementation of the Discovering Democracy program. The Australian Principals Associations Professional Development Council (APAPDC) was contracted to provide an information strategy on the Discovery Democracy Program for school principals. The initial component involved presenting two interactive satellite workshops in March 1998 and April 1999 involving 1,150 principals attending at more than 70 sites across Australia. Following both broadcasts, reports were prepared and distributed to all participants, together with a copy of the broadcasts on video. In 2000, APAPDC conducted a Snapshots project presenting 25 case studies focusing on successful implementation of the Discovering Democracy materials in public, Catholic and independent schools. In 2001, APAPDC conducted a project, Leadership 2001, providing a resource booklet for principals, an on-line learning centre for leaders, and a seminar program for state and territory APAPDC branches. The Australian Federation of Societies for the Studies of Society and Environment (AFSSSE) was contracted to conduct several projects. In 1997 and 1998, the Discovering Democracy Teacher Focus Group project sought to identify teachers' views about the Discovering Democracy materials through a series of meetings in the states and territories. In 1998 and 1999, the Discovering Democracy: An Implementation Focus project raised awareness of the Discovering Democracy program through a web site. In 1999 and 2000, the Discovering Democracy: Professional Development through Technology project organised an on-line discussion about implementing the Discovering Democracy materials. In 2000 and 2001, the Discovering Democracy Case Studies project collected and published

30 case studies presenting teaching units using the Discovering Democracy materials. Contracted to publicise the Discovering Democracy program to parents, the Australian Council of State School Organisations published a civics and citizenship education kit in 1999. Implementation at the state level involved aligning the Discovering Democracy program to each state or territory curriculum, as well as appointing state coordinators to facilitate professional development programs for teachers.

The Commonwealth Department of Education, Employment and Youth Affairs commissioned the Erebus Consulting Group to evaluate the first phase of the Discovering Democracy program between 1997 and 1999. The methodology employed a nationwide survey of over 8,000 teachers, in-depth interviews with 51 stakeholders, and a series of case studies conducted in 65 schools across Australia. In the report of the evaluation, the Erebus Consulting Group (1999) presented 25 recommendations framed according to six terms of reference. First, the program should be funded for another three to four years focusing on assessment of student outcomes, and extending the program to grades K to 3, and 11 and 12. Second, a set of objectives should be defined for the next phase of the project, which should focus on consolidating implementation of the program using the existing networks and strategies. Third, the relationship between state curricula and the scope and sequence of Discovering Democracy activities should be determined, a strategy should be formulated to raise teacher awareness, and a pre-service teacher education program should be funded. Fourth, the means for disseminating resources should be transferred to a web site, which would harness existing web-based resources. Fifth, professional development should use a networking approach, and include national awards, research into practice and sharing school-based approaches and materials. Sixth, Discovering Democracy activities should be coordinated with national priorities in government policy.

In line with the recommendations of the evaluation of the first phase, some strategic changes in direction were made in the second phase. The initial funding was increased to extend the Discovering Democracy program until the end of the second phase in June 2004. Student performance indicators were developed to measure a nationwide sample of students at grades 6 and 10 on their achievement in civics and citizenship education. The Australian Government Department of Education, Science and Training commissioned Erebus Consulting Partners to evaluate the second phase of the Discovering Democracy program between 2000 and 2003. The methodology employed a nationwide survey of 2,143 teachers, in-depth interviews with 60 stakeholders, a series of case studies conducted in 63 schools across Australia, and an analysis of policy statements, curriculum documents and research reports. In the report of the evaluation, Erebus Consulting Partners (2003) presented 12 recommendations. First, professional development in civics and citizenship education should be linked to broader values-based education to strengthen students'

judgments and responsibilities. Second, Australian government funding of the Discovering Democracy program need not be continued beyond the end of the second phase. Third, future support by the Australian government should focus on students acquiring and applying civic values in a global environment. Fourth, the agenda for civic values should be linked to other national programs. Fifth, a major values education and civics education program should be funded for four years. Sixth, the purposes and learning outcomes of the agenda for civic values should reflect the National Goals, employ a consultative process for development, apply a strategic plan for implementation, and be aligned to state-level curricula. Seventh, the Discovering Democracy web site and the annual forum for students should be incorporated into the agenda for civic values. Eighth, professional development for the agenda for civic values should focus on specific principles. Ninth, the development of materials for the agenda for civic values should be funded for early childhood education. Tenth, an awards program should reward the work of school communities in promoting civic values education. Eleventh, a national strategic group should be constituted to provide advice for the agenda for civic values. Twelfth, other mechanisms should be considered to incorporate the agenda for civic values into pre-service teacher education.

8.6.3 The [Le@rning](#) Federation

In collaboration with Education.Au, the Commonwealth Department of Education, Training and Youth Affairs and the Education Network Australia Schools Advisory Group, the Curriculum Corporation prepared a paper for CESCEO proposing a strategy for establishing an information service for on-line materials. After consideration, CESCEO submitted the proposal to MCEETYA in October 1999. At the same time, the Curriculum Corporation commissioned Trinitas, a consulting firm providing advice on business issues, to investigate the market for on-line materials. In its report, Trinitas (2000) recommended that MCEETYA should initiate a four-year project to develop on-line materials in the areas of literacy, numeracy, science, information technology, studies of society and environment, civics, vocational education, and languages. At its meeting in March 2000, MCEETYA agreed to pursue the initiative recommended by Trinitas, and authorised CESCEO to oversee the Schools On-line Curriculum Content Initiative. CESCEO appointed a group to manage the initiative, and based a secretariat in Adelaide, South Australia.

Then, CESCEO commissioned the Curriculum Corporation to conduct projects on market information and quality assurance, and Education.Au to conduct a project on information systems brokerage. The market information project involved designing a database of on-line curriculum initiatives developed by education agencies and other organisations. The quality assurance project consisted of three phases. First, a national consensus on criteria for educational soundness and good practice for on-line materials and an information environment was agreed. Second, an endorsement mechanism for private providers was

recommended. Third, a consultant was commissioned to produce a paper reviewing quality, design, development and delivery of on-line materials. The information systems brokerage project consisted of four phases. First, Education.Au developed a paper on interoperability standards. Second, a discussion paper on the design of the information system to support the collection of on-line materials was submitted to education agencies for consultation in January 2001. Third, a paper on approaches that could be adopted for compiling a thesaurus to provide a controlled vocabulary for database searches was commissioned from the Curriculum Materials Information Services of the Education Department of Western Australia. Fourth, a paper commissioned from IPR Systems at Milsons Point, New South Wales, on requirements and proposed approaches for the development of a rights management system to support the exchange of on-line materials was released in April 2001.

CESCEO developed a policy for sharing intellectual property between states and territories for future materials developed outside collaborative arrangements, and considered the involvement of independent schools. Priority areas were determined and advice was provided to the Curriculum Corporation on structuring projects to deliver a collection of materials to meet these priorities. CESCEO also commissioned the Curriculum Corporation to develop an approach for project management of content development, and to contract a research study on the ways that teachers use on-line materials in their teaching practice. The Curriculum Corporation contracted the Queensland University of Technology to investigate the ways literacy, languages other than English, mathematics and science teachers identified, stored, used and shared on-line materials. Between May and August of 2001, 276 teachers in 88 schools across Australia currently using on-line materials responded to a survey, whilst 85 teachers in 27 schools across Australia currently using on-line materials participated in interviews and classroom observations. Analysis of the data gathered from the survey, interviews and observations indicated that teachers across the four learning areas were generally in agreement on many aspects of what they considered to be useful on-line materials. The Queensland University of Technology (2001) presented seven recommendations based on the findings of the study. First, on-line materials should be developed with a view to bridging the divide between instructional design and digital learning object design. Second, on-line materials should support currently used syllabuses and curriculum frameworks. Third, on-line materials should be accessible, generative, adaptable and scalable. Fourth, on-line materials should support learning in any place and at any pace. Fifth, on-line materials should be authentic, capable of engaging students, and facilitate creativity and higher order thinking. Sixth, on-line materials should include assistance for teachers by way of teaching notes, lesson plans, explanations, and links to other resource materials and direct curriculum links. Seventh, on-line materials should provide a means for teachers and students to communicate and exchange ideas with others.

Meeting at Hobart in November 2000, CESCEO determined that the six priority areas of science, mathematics and numeracy, literacy for students at risk, studies of Australia, innovation, enterprise and creativity, and languages other than English would be encompassed in 25 projects to be undertaken between 2001 and 2006. In June 2001, CESCEO approved the five-year plan to develop the 25 projects over several rounds. The on-line materials developed in these projects would be supported by research into their potential appeal and use, the application of criteria to satisfy quality assurance, and the development of metadata standards and thesauri. At the thirteenth meeting of MCEETYA held at Auckland, New Zealand, in July 2001, New Zealand joined the initiative, and the Schools On-line Curriculum Content Initiative was renamed the [Le@rning](#) Federation.

The first round consisted of one project in each priority area. Practical Resources and Interactive Science Materials, a searchable database of learning activities for science designed by the Victoria Department of Education, Employment and Training, was extended from January 2002 to include materials for the primary and middle secondary levels. In January 2003, the on-line materials for science were released for members of the consultative groups and contact liaison officers to familiarise and review the content. Selected schools were provided with access to the on-line materials for the purpose of trial and small-scale implementation. Schools gained access to the on-line materials by installing the Basic e-learning Tool Set, software developed by the Curriculum Corporation and Education.Au, which was distributed to schools by public and independent education agencies. Commencing in July 2002, materials to support the learning of mathematical concepts for upper primary and junior secondary levels were developed for release in November 2003. Commencing in September 2002, materials to support students at risk of not achieving the literacy benchmarks were developed for release in December 2003. Commencing in November 2002, materials for the study of Australia's history, geography and culture were developed for release in June 2004. Commencing in February 2003, materials for the study of innovative capacities, arts, design and technology in vocational learning were developed for release in July 2004. Commencing in May 2003, materials to support the early stages of second language learning for Chinese, Japanese and Indonesian were developed for release in September 2004.

A project management framework, setting out the production process, methodology, and consultative process to be applied, was designed. The production process consisted of five steps. First, a curriculum area reference group developed a brief outlining the scope of the project. Second, each project was commissioned on a competitive basis. Third, specified criteria were applied to select the successful contractor from the applicants. Fourth, an

expert focus group was formed to provide advice for the sequence of five phases for content development. The developer worked with the curriculum area reference group to prepare concept and design specifications for the on-line material. The developer produced components for a prototype of the on-line material. The prototype was pilot-tested in selected schools for useability and content integrity. The developer continued developing further components. After testing by an independent testing agency, the on-line material was field-tested in schools. The methodology applied a model of user-centred design applying the active involvement of users, collecting feedback from users during development, involving multi-disciplinary developer teams, and using media appropriately for treatment of content. Referred to as a 'learning object' by the developers, an on-line material consists of one or more files that stand-alone or form components of a learning sequence. The user may reconfigure an on-line material to suit specific teaching requirements. The instructional design of an on-line material aims to enhance the attractiveness of layout and design, easy navigation, flexibility for users to modify, the use of composite multimedia formats, and the appropriate use of technologies to support learning outcomes. The consultative process allowed for some of the three consultative groups to operate across several projects, whilst other groups were established for particular projects within a learning area. Members of the curriculum area reference groups were selected on the basis of their experience in a learning area, school education, national curriculum initiatives, and information and communication technology. Each curriculum area reference group was responsible for specifying the project objectives, developing the characteristics and requirements of the content area, determining preferred teaching methods, establishing proposed developmental phases, and reviewing the brief. Members of expert focus groups were selected on the basis of their experience in a learning area, teaching practice, using digital resources in the classroom, and implementing information and communication technology in schools. Each expert focus group provided the project management and content developers with feedback during the developmental process. Members of user focus groups were teachers with classes in the particular learning area of each project, who were able to demonstrate the use of digital resources in the classroom. The user focus groups provided school-based testing, evaluation and review of the content during the developmental phase.

8.7 Conclusion

This review shows that national curriculum collaboration in Australia established a balance between the demands for centralisation and the requirements for state autonomy by providing a consensus-building process, which AEC and its successor, MCEETYA, followed. In spite of the lack of mandatory legislation, this process was generally successful in ameliorating tensions, which arose from the closed process applied to develop the national statements and profiles through a central agency. However, the lack of

consultation with groups, such as subject associations and academics, was responsible for igniting the controversy surrounding the Mathematics profile. Although these groups may have contributed to altering the course of national curriculum collaboration in 1993 by forcing AEC to shift the initiative for further work to the states and territories, they failed in their prime objective of securing a review of the national statements and profiles. This shift changed the intent of the national statements and profiles from providing a national curriculum to forming the basis for curriculum planning at the state level.

In setting out the knowledge, skills and processes for particular learning areas, the national statements provided the basis for identifying the content to be included in curriculum materials. Furthermore, the project teams and steering committees, responsible for each learning area, specified in each of the national statements particular types of materials considered appropriate for students in each of the four bands. However, the principle of specifying selection criteria, followed in the Mathematics statement, was not applied in any of the national statements for the remaining seven learning areas. The intent of using the national statements as a basis for developing materials was reinforced by the production of guidelines for developing curriculum materials and interactive multimedia courseware, aimed at assisting federal and state governmental agencies, and non-commercial agencies produce materials of high quality. However, adaptation of these guidelines to the needs of the publishing industry could have led to their wider application in improving the quality of materials and their match to the curriculum.

Policy-makers and curriculum developers applied the research, development and diffusion model, a variant of the planned change model, used in curriculum reform to develop and implement the Discovering Democracy materials, a view supported by Finch (1999). The evolution of the Discovering Democracy program from work initiated by the Civics Education Group gave its members a similar status to the academic scholars prominent in the projects of the curriculum reform movement, since they acquired sole responsibility for developing and approving the Discovering Democracy materials. The importance given to academics led them to apply a historical focus, and promote the formation of concepts of citizenship based on a traditional view of democracy. The appointment of commissioned writers to develop the Discovering Democracy materials relegated teachers to the role of consumers for the new materials. Centrally controlled change through the Curriculum Corporation led to the production of materials characterised by conventional applications of print and audiovisual media, more typical of the curriculum reform movement than the distinctive application of information and communication technology in contemporary curriculum reform.

The development of on-line materials through the [Le@rning](#) Federation reflected an innovative activity for inventing, testing and diffusing new solutions in applying the Internet to present curriculum resources in flexible formats, enabling them to be reconfigured to suit specific teaching requirements. Policy-makers, curriculum developers and information specialists applied the planned change model to design the information system. The planned change process involved researching the theoretical basis for change, developing a repository and the on-line materials through invention, design, construction and assembly, diffusing the on-line materials through dissemination and demonstration, and adopting the on-line materials through training, trial, installation and institutionalisation. The [Le@rning](#) Federation exhibited the key features of the planned change model by transforming from a probing and exploratory exercise in the early stages to a rigorous engineering and market research investigation in the later stages. Since such change is an expensive, high-risk proposition supported by little theoretical or extant knowledge, this initiative could have benefited from drawing on developmental work conducted in the same field in the United States, rather than being restricted to a home grown solution.

CHAPTER 9

CURRICULUM REFORMS AT THE STATE LEVEL IN AUSTRALIA

The incorporation of the principles embodied in the national statements and profiles into the curricula of the states and territories in Australia represented a critical challenge for state-level policy-makers, especially in light of inadequate information provided by national authorities about the quality of their curriculum documents. Meeting in December 1993, AEC and MOVEET commissioned the Curriculum Corporation to identify approaches being taken by the states and territories to implement the national statements and profiles, which led to surveys being conducted in 1994, 1995 and 1996 to collect data from state and territory education agencies. However, these data only provided information about the progress of implementation, and not about the quality of the standards defined in the outcomes expressed in curriculum documents developed by the Australian states and territories. Furthermore, a study undertaken in 1996 by the Australian Council for Educational Research represents the only in-depth investigation into the implementation of the national profiles at the state level.

The purpose of this chapter is to examine the impact of curriculum reforms in the states and territories on aspects relating to the development, selection and use of resources. An assumption underlying this rationale is that the development, selection and use of resources are dependent on the processes and products of curriculum reform. Since the states and school communities have the primary responsibility for the selection of resources used in schools, the intent in this chapter is to identify specific strategies that each state is employing to improve the development, selection and use of resources in the context of curriculum reform.

9.1 Study on Implementation of the National Statements and Profiles

9.1.1 Australian Council for Educational Research

In mid-1995, the Australian Council for Educational Research (ACER) was commissioned by the Commonwealth Department of Employment, Education, Training and Youth Affairs to conduct a study to investigate the use of the national profiles or their state variants, and their role in classroom assessment and reporting student learning outcomes. A Management Committee, consisting of representatives from the public, Catholic and independent sectors, teacher unions, and the National Schools Network, was appointed early in 1996 to oversee the project, which consisted of three stages. First, each state and territory education agency was invited to commission a knowledgeable person to prepare a report on current initiatives in curriculum, assessment and reporting in its system. Second,

two nationwide samples were surveyed by questionnaire in March and April of 1996 to identify teachers' practices and attitudes in using the national profiles or their state variants, and exemplary practices in their classroom use for assessment and reporting. A stratified random sample of 390 public, Catholic and independent schools and a systematic sample of 52 schools nominated because of their involvement in trialing and implementing the national profiles provided the two samples. Third, site visits were made between June and September of 1996 to 26 schools in New South Wales, Victoria, South Australia, Western Australia, Tasmania and the Northern Territory by two researchers. They used a schedule to interview principals, and those teachers responding to the questionnaire, on their use of the national profiles or their state variants for teaching, assessment and reporting.

On the basis of responses received from 553 teachers in 208 schools surveyed, Frigo and Lokan (1997) reported that 18 schools had begun implementing the national profiles in 1993, 81 in 1994, 66 in 1995, and 2 in 1996. Although implementation of the national profiles was usually restricted to English and Mathematics, 88 schools, mainly in Victoria and South Australia, reported implementing them in all eight key learning areas during 1996. Commitment to implementing the national profiles was rated as a high priority in 55 schools, as a medium priority in 73 schools, and as a low priority in 58 schools. In reporting their involvement in professional development related to the national profiles, 19 percent of teachers stated they participated in the National Professional Development Program, 32 percent participated in activities sponsored by professional associations, 60 percent were involved in school-based professional development, and 24 percent participated in other activities. Teachers also rated the usefulness of the national profiles. The English profile was rated as useful by 93 percent. The Science profile was rated as useful by 90 percent. The Mathematics profile was rated as useful by 89 percent. The Health and Physical Education profile was rated as useful by 89 percent. The Studies of Society and Environment profile was rated as useful by 88 percent. The Technology profile was rated as useful by 88 percent. The Arts profile was rated as useful by 85 percent. The Languages other than English profile was rated as useful by 68 percent. Teachers reported on the benefits of using the national profiles for five functions. Their use was rated as beneficial by 68 percent for curriculum review, 63 percent for determining the teaching and learning focus, 51 percent for assessment and reporting, 41 percent for providing a common framework for reporting, and 34 percent for working with other teachers. Teachers reported on their concerns about using the national profiles across five issues. They were viewed as problematical by 89 percent of teachers because of the amount of time required, 67 percent because of the lack of parental understanding, 65 percent because of the lack of resources and training, and 47 percent because of negative attitudes from other teachers. Teachers suggested ways implementation of the national profiles could be improved.

Providing more time was seen as important by 31 percent. Providing more in-service training was seen as important by 20 percent. Providing more teacher networks was seen as important by 13 percent. Providing more curriculum review and improved teaching conditions were each seen as important by six percent. Providing improved decision-making was seen as important by five percent.

The findings of the interviews, reported by Mellor and Frigo (1997), showed that respondents were aware of the ramifications posed by implementation of the national profiles. They recognised that implementation required reviewing the school's curriculum, reviewing plans for delivering the curriculum in their classrooms, examining the suitability of outcomes, developing an assessment procedure, providing a reporting framework, and developing a process for working with their colleagues. The interviews with teachers identified that successful implementation of the national profiles was affected by four key factors: the congruence existing between the state-level curriculum and outcome-based approaches; perceptions that implementation was inevitable; the availability of a teacher leader; and the provision of adequate time. Implementation of the national profiles was also affected by seven other less important factors. First, the accessibility of language presented in the documents, the amount of material included in the documents, and changes to content made in the documents. Second, the flexibility offered in interpreting student outcomes and levels. Third, the acceptance of and agreement with issues relating to levels as a concept, and their comparability across key learning areas. Fourth, the capabilities of teachers in terms of experience and confidence, their involvement in professional development and teacher networks, and participation in effective pre-service training. Fifth, the recognition administrators gave to the professionalism of teachers. Sixth, the extent that parents and students were involved in the implementation process. Seventh, the extent to which information technology was applied to record and report student outcomes. On the basis of the interviews, certain strategies appeared to be more effective for integrating assessment into teaching and learning. Successful implementation of the national profiles was seen by respondents to have five benefits. First, contributions by a range of players in the educational process were recognised. Second, teachers increased their interactions about classroom practices. Third, teachers became more accountable for student learning. Fourth, teaching and learning became a joint task for both teachers and students. Fifth, reporting became more explicit. As a consequence students learnt differently, and teachers experienced an enhanced sense of professional worth.

Mellor and Lokan (1997) concluded that since the findings showed schools were at varying stages of implementing the national profiles, it was unlikely that their adoption could be accomplished in less than five years. Many respondents, however, held that time limits needed to be imposed on completing successful implementation of the national profiles in

schools, a situation that was not helped by the unrealistic views of some officials about the progress of implementation, and the lack of involvement by some teachers. Therefore, a relatively slow, staged implementation process dependent on progressive training was seen as essential. However, implementation was unlikely to be successful if it was under-resourced, so partial as to be tenuous, directed to only one aspect of the reform, focused on later stages of the reform to the detriment of earlier stages, and no benefits were perceived to flow from the process. Effective adoption of the national profiles was seen to depend on focusing on student learning, employing the best strategies for implementation, recognising needs, and applying effort.

9.2 Organisation of the State and Territory Reports

Each of the reports presented in the state-by-state analyses has been organised according to a set of ten descriptors. These descriptors are Title of State Curriculum; Components; Key Learning Areas; Grade Ranges; Developmental Process; Implementation Process; Revision Process; Degree of State Control over Materials' Adoption; Degree of Local Control over Materials' Adoption; and Strategies Relating to Materials.

9.3 Implementation Process in the States and Territories

Australian Capital Territory

Title of Territory Curriculum: ACT Curriculum Frameworks

Components: The ACT Curriculum Frameworks, which organise outcomes by strands, provide guidelines for schools to develop courses. The ACT Course Frameworks, which present information on content and assessment, provide guidelines for secondary colleges to develop courses. The Across Curriculum Perspectives Statements, which present suggestions for teaching and learning strategies, selection of content, implementation in the key learning areas, assessment, reporting and evaluation strategies, and lists of professional references, are used to incorporate cross-curricular perspectives in course documents developed by schools.

Key Learning Areas: Arts; English Language; Health and Physical Education; Languages other than English; Mathematics; Science; Studies of Society and Environment; Technology

Grade Ranges: early years of schooling (preschool to 1); lower primary (1 to 4); upper primary (4 to 7); high school (7 to 10); and post compulsory (11 to 12)

Developmental Process: Beginning in 1984, the Australian Capital Territory Schools Authority developed curriculum frameworks after initiation of a five-year plan for curriculum review and renewal. Following a decision made to align the curriculum frameworks with the national statements in 1990, working parties of teachers merged the frameworks. After a system-wide consultative process, the ACT Curriculum Frameworks were published in December 1993. The Australian Capital Territory Department of

Education and Training consulted teachers across the Australian Capital Territory to identify perspectives they addressed in classrooms that were not included in the ACT Curriculum Frameworks. Following identification of nine cross-curricular perspectives, groups of curriculum specialists and teachers developed support papers on Aboriginal education and Torres Strait Islander education, Australian education, environment education, gender equity, information access, language for understanding, multicultural education, special needs education, and work education, which were published in 1997. The Australian Capital Territory Department of Education and Community Services published a Drug Education framework in 1999.

Implementation Process: The ACT Curriculum Frameworks were distributed to schools in March 1994 for implementation. The ACT Curriculum Frameworks are used to develop school-based curricula through a four-step process. First, the school's steering committee becomes familiar with the ACT Curriculum Frameworks and the national profiles. Second, the curricular needs of the school are identified. Third, the current curriculum is mapped. Fourth, school-based curriculum development is incorporated into the five-year cycle for school development. A review phase within the five-year cycle for school development involves a steering committee reviewing school policy documents, conducting a curriculum review, and surveying teachers, parents and students in order to develop an issues' paper, which is approved by the school board following consultation with the local community. The issues' paper provides the basis for a planning phase, in which the school board develops a four-year school development plan through a process of community consultation. Following approval of the plan by the Department of Education and Community Services, the school board prepares a school development report setting out the process undertaken for school development. A procedure for monitoring implementation of the plan involves producing annual action plans.

Revision Process: Appointed in September 2003 to oversee a review of the curriculum for Australian Capital Territory schools, the Curriculum Renewal Taskforce formulated a set of criteria to evaluate the curriculum and proposed a set of principles to guide curriculum development. A Curriculum Renewal Team evaluated the existing curriculum by examining curricula from other states, reviewing educational research referring to the Australian Capital Territory, and visiting schools to discuss curriculum issues. The findings of the evaluation led the Curriculum Renewal Taskforce to recommend replacing the current curriculum documents with ACT Curriculum Requirements specifying an overarching educational purpose, providing a plan for student learning, defining essential learnings, incorporating across curriculum perspectives, and encompassing the eight key learning areas. Released in April 2004, a discussion paper presenting the principles, and propositions about the ACT Curriculum Requirements led the Curriculum Renewal Team to convene 123 meetings with teachers, parents and students. Responses to a survey conducted during the consultation indicated strong support for the principles, but less

support for the propositions. The ACT Course Frameworks are evaluated as needed, or every five years, for possible revision by committees of teachers. The Australian Capital Territory Board of Senior Secondary Studies accredits courses developed by schools from the ACT Course Frameworks for five years.

Degree of State Control over Materials' Adoption: The Board of Senior Secondary Studies convenes accreditation panels, which approve materials recommended by school boards for school-developed courses for grades 11 and 12.

Degree of Local Control over Materials' Adoption: Teachers select materials in schools.

Strategies Relating to Materials: The Department of Education and Community Services published the *ACT Mathematics Curriculum Framework Resource Books*, providing activities for each grade level to elaborate the scope statements in the ACT Mathematics curriculum framework.

New South Wales

Title of State Curriculum: New South Wales Syllabuses

Components: The New South Wales Syllabuses, which organise outcomes and indicators by strands, provide guidelines for schools to plan programs and assessment. The Modules for stages 1 to 3, which contain recommended teaching strategies, sample units of work, and annotated student work samples, provide guidelines to assist teachers in planning, programming and assessment. The Support Documents for stages 4 to 6 provide guidelines to assist teachers in planning, programming and assessment.

Key Learning Areas: The New South Wales Syllabuses consist of two bands. Stage 1 to 3 syllabuses cover Creative and Practical Arts, English, Mathematics, Human Society and its Environment, Personal Development, Health and Physical Education, and Science and Technology. Stage 4 to 6 syllabuses cover Creative Arts, English, Mathematics, Human Society and its Environment, Languages other than English, Personal Development, Health and Physical Education, Science, and Technological and Applied Studies.

Grade Ranges: early stage 1 (K); stage 1 (1 to 2); stage 2 (3 to 4); stage 3 (5 to 6); stage 4 (7 to 8); stage 5 (9 to 10); stage 6 (11 to 12)

Developmental Process: Recommendations from reports on system-wide management and curriculum reform, and a ministerial policy statement on the core curriculum led to the enactment of the Education Reform Act in 1990, which established the New South Wales Board of Studies in June 1990. In 1991, syllabus advisory committees began developing new syllabuses, incorporating outcomes and pointers, which were supplemented by support documents for teachers and parents. In May 1995, the newly elected Labor government initiated the Review of Outcomes and Profiles. The Review Panel recommended that levels and pointers should be replaced with outcomes based on stages, syllabuses for stages 1 to 3 should be implemented by employing a cycle commencing in 1997, and syllabuses for stages 4 and 5 should be developed over realistic time frames. In

1996, the Board of Studies released a paper presenting a model for developing syllabuses and support documents, and establishing an understanding of the place of outcomes in syllabuses. In August 1998, the Board of Studies appointed representative board curriculum committees to monitor a process for developing or revising syllabuses over five phases. First, a plan of the process is developed and promoted. Second, the writing brief is developed through consultation and analysis of input. Third, the syllabus is developed from the writing brief by the project team followed by statewide consultation and revision. Fourth, the syllabus is produced and implemented in schools. Fifth, data on the use of the syllabus are collected and evaluated. The development of syllabuses for stage 6 was affected by the Review of the Higher School Certificate initiated in 1995. The Review led to the release of a discussion paper in 1996, a report on 38 public hearings and the analysis of more than 1,000 submissions following a public review in 1997, and a paper issued in 1997 presenting the state government's reforms to the Higher School Certificate. In order to redesign the new structure of courses for stage 6, the Board of Studies appointed a project team to evaluate the extent to which each Board-developed syllabus needed to be revised. The draft reports were then presented for consultation across the educational community before the final reports were produced and presented to the Board of Studies in June 1998. The recommendations of the evaluation reports were used to develop writing briefs, a process begun in August 1998. Following consultation across the educational community, each writing brief was revised and approved as the basis for syllabus development. The syllabuses were then developed and presented to the educational community for review between February and April of 1999, prior to final revision on the basis of responses. Following approval by the Minister for Education and Training in April and May of 1999, the new syllabuses were published and distributed to schools in July 1999.

Implementation Process: The Board of Studies disseminates a principal's package and a book for parents and community members to introduce each new syllabus for stages 1 to 3, as well as support documents to assist teachers implement each syllabus. Commencing in June 1999, the New South Wales Department of Education and Training trained professional learning teams to facilitate implementation of the syllabuses for stage 6 at local interest group events focusing on school structures and organisation, syllabus implementation and assessments. A web site, workshops in key learning areas, and state conferences supported implementation of the syllabuses for stage 6. In 2003 and 2004, the Board of Studies conducted presentation sessions across New South Wales to familiarise teachers with the revised syllabuses for stages 4 and 5 implemented between 2004 and 2006.

Revision Process: Revised syllabuses for stages 1 to 3 were approved for English in March 1998, Human Society and its Environment in October 1998, Personal Development, Health and Physical Education in August 1999, Creative Arts in December 2000, and Mathematics in November 2002. In 2000, the Board of Studies began developing the K to 10 Curriculum Framework to provide a basis for reviewing the primary and secondary syllabuses.

Following consultation on the first draft, a revised draft was produced in March 2001 and then submitted for review by focus groups and organisations. Their responses indicated broad support for the direction established in the draft, particularly the move towards a standards-based approach to syllabus design. In October 2001, the Board of Studies approved a set of criteria to be used to ensure that standards of high quality are met by the syllabuses, and that the intentions of the K to 10 Curriculum Framework are achieved. Published in March 2002, the K to 10 Curriculum Framework presents six principal elements. Syllabuses should present a clear understanding of the purpose of learning. Syllabuses should specify the broad learning outcomes essential for all students. The development of curriculum requirements and syllabuses should be guided by principles of student engagement, a core curriculum, explicit standards, inclusiveness, and maximising student learning. The curriculum should provide a K to 10 standards framework. Syllabuses should be developed according to a defined process and approved according to specified criteria. The Board of Studies is empowered by the Education Reform Act of 1990 to establish guidelines for courses of study. The K to 10 Curriculum Framework guided the review and revision of the syllabuses for stages 4 and 5 commenced in September 2001. Following approval by the Minister for Education and Training, the revised syllabuses for stages 4 and 5 were published and distributed to schools in 2003 and 2004. Board-endorsed syllabuses, approved for a four-year period, must be followed by a new syllabus proposal.

Degree of State Control over Materials' Adoption: Reviewers advise the Library and Information Literacy team of the New South Wales Department of Education and Training about the selection of a multiple number of recommended materials listed in Resource Reviews, which are disseminated to schools to assist teachers select materials. The Board of Studies convenes subject advisory committees, which identify from materials in use a multiple number of recommended materials included in resource lists published to support syllabuses for stages 1 to 3, 4 to 5, and 6. The English Subject Advisory Committee selects a multiple number of approved materials, screened by a Reference Group of representatives from community organisations for social content, before the Board of Studies adopts the state list of literary texts for stage 6 English.

Degree of Local Control over Materials' Adoption: District-based committees oversee teachers selecting materials from Resource Reviews for kindergarten to grade 12, and resource lists provided by the Board of Studies for kindergarten to grade 12.

Strategies Relating to Materials: The New South Wales Department of Education and Training maintains on its web site, Resource Reviews, searchable databases of reviews on CD-ROMs, supplementary reading materials and videos, and web sites. For some syllabuses, the Board of Studies publishes resource lists of materials, which are periodically updated. In July 2001, the Board of Studies published *HSC Resources and Textbooks*, providing guidelines for selecting appropriate materials, and lists of textbooks and supplementary resources for the stage 6 syllabuses.

Northern Territory

Title of Territory Curriculum: NT Curriculum Framework

Components: The NT Curriculum Framework, which organises outcomes and indicators by strands, provides guidelines for schools to develop programs, assess student progress and report outcomes.

Key Learning Areas: The NT Curriculum Framework is organised into English as a Second Language, Indigenous Languages and Culture, and eight learning areas: Arts; English; Health and Physical Education; Languages; Mathematics; Science; Studies of Society and Environment; and Technology and Design.

Grade Ranges: key growth points 1, 2 and 3 (school entry points); band 1 (2); band 2 (4); band 3 (6); band 4 (8); band 5 (10); 11 to 12

Developmental Process: In 1992, the Northern Territory Board of Studies completed a series of reviews covering the curriculum, assessment and certification by releasing a Common Curriculum Statement, which organised the curriculum into 11 subject areas, and a Common Assessment Framework, which incorporated both school-based assessment and a system-wide testing program. The outcome of a pilot project to trial the national profiles for English and Mathematics in 1995 led to the development in 1997 of the Northern Territory Outcomes Profiles based on only one outcome for each level across each strand. Implementation of the Northern Territory Outcomes Profiles in 1998 led the Board of Studies to publish a Common Assessment and Reporting Statement, providing a framework for schools to plan, develop and implement their own policies in relation to assessing and reporting student achievement. In 1998, the Board of Studies revised the Common Curriculum Statement to reflect the adoption of the nationally agreed learning areas, and to provide a framework for schools to implement the common curriculum in terms of balance among the learning areas and across curricular perspectives. Early in 1999, the Board of Studies published a Learning Area Statement for each of the eight learning areas, which described the content and essential outcomes of the common curriculum. As an outcome of a review of education in the Northern Territory initiated in September 1998, a Task Group appointed to redesign curriculum functions released a discussion paper. It recommended that the Board of Studies should develop a curriculum framework to replace the Common Curriculum Statement, the Common Assessment and Reporting Statement, and the learning area statements. Appointed in December 1999, a Curriculum Framework Team disseminated an information pack in January 2000, to which each school nominated its degree of involvement in the review. The first phase of the review involved distributing an options pack to schools outlining key elements for the proposed framework in March 2000. The options pack was revised by the Curriculum Framework Team on the basis of responses, and distributed to all schools in April 2000. The second phase involved appointing focus groups, each consisting of a contributing team

and a field-testing team, for the eight learning areas, five bands, six areas of student diversity, and four cross-curricular areas. Following receipt of responses to the second distribution, the contributing teams revised the options pack in August 2000 to form a field-testing version. The field-testing version was revised on the basis of the responses to form a pilot version, which was piloted in more than 90 schools during February and March of 2001. The pilot version was revised, and presented for public review by parents, business and industry groups in July 2001. Following an evaluation of the final draft by the Curriculum Corporation in November 2001, the Board of Studies approved the NT Curriculum Framework in March 2002.

Implementation Process: In July 2001, the Northern Territory Department of Education released an implementation guide, *Programming Support Using the NT Curriculum Framework*, presenting components on long-term, medium-term and short-term planning for implementation of the NT Curriculum Framework in schools. Developed by the Northern Territory Department of Employment, Education and Training, an electronic curriculum management tool for outcome-focused planning, assessing and reporting student achievement was implemented in 25 schools late in 2003.

Revision Process: No process has been determined for revising the NT Curriculum Framework. Each course of study developed by the Board of Studies for grades 11 and 12 is revised every five years. The revised draft, which is prepared by a Subject Area Committee, is presented to teachers for consultation on proposed changes. The Board of Studies approves each final draft course of study. The Board of Studies also uses curriculum statements developed by the Senior Secondary Assessment Board of South Australia.

Degree of State Control over Materials' Adoption: The Board of Studies convenes subcommittees, which identify from materials in use, a multiple number of recommended materials for lists published in courses of study for grades 11 and 12.

Degree of Local Control over Materials' Adoption: Teachers select materials in schools for kindergarten to grade 10, and from courses of study provided by the Board of Studies for grades 11 and 12.

Strategies Relating to Materials: No strategies were identified.

Queensland

Title of State Curriculum: Queensland Syllabuses

Components: The Queensland Syllabuses, which organise key learning area, core learning and discretionary learning outcomes by strands, provide guidelines for schools in planning programs and assessment. The Sourcebooks, consisting of guidelines and modules providing the basis for planning units of work, provide resources for planning, implementation, support and assessment.

Key Learning Areas: The Queensland Syllabuses consist of two clusters. Key Learning Area Syllabuses for levels 1 to 6 consist of Arts, English, Health and Physical Education, Languages other than English, Mathematics, Science, Studies of Society and Environment, and Technology. Subject Syllabuses for levels 5 and 6 consist of Agriculture Education, Business Education, Home Economics Education, Industrial Technology and Design Education, and Information and Communication Education.

Grade Ranges: preschool; level 1 (1); level 2 (3); level 3 (5); level 4 (7); level 5 (9); level 6 (10); 11 to 12

Developmental Process: In November 1992, the Labor government appointed a four-member panel to review the curriculum. The panel recommended in 1994 that the structures for managing the curriculum should be changed, new syllabuses should be based on the national statements and profiles, and student learning outcomes should be incorporated into the new syllabuses. Although the Labor government established the Queensland Curriculum Council to design a strategic plan based on these recommendations and the Queensland School Curriculum Office to implement the strategic plan, these two bodies were merged by the succeeding National-Liberal coalition government to form the Queensland School Curriculum Council in December 1996. Following a decision taken by the Labor government in September 2001, the state parliament legislated in February 2002 to amalgamate the Queensland School Curriculum Council, the Queensland Board of Senior Secondary School Studies, and the Tertiary Entrance Procedures Authority to form a new agency. The Queensland Studies Authority commenced operations in July 2002. Since syllabuses for Mathematics and English had been published in 1987 and 1994, the Queensland School Curriculum Council developed new syllabuses for the remaining six key learning areas over three rounds. A process, adopted to develop each syllabus over three years, applied a sequence of seven steps. A project team and a syllabus advisory committee are appointed. A design brief is prepared. The syllabus draft is developed. The draft is trialed and piloted in schools. The trial is evaluated externally, and the draft is revised at evaluation conferences. The sourcebook is prepared. The syllabus and sourcebook are published and disseminated. In the first round, syllabuses for Science, and Health and Physical Education were published in 1998. In the second round, syllabuses for Studies of Society and Environment and subject syllabuses for Civics, Geography and History, and Languages other than English for Chinese, French, German, Indonesian, Italian, Japanese and Korean were published in January 2000. Curriculum guidelines for Languages other than English in grades 1 to 3 were published in December 2000. In the third round, syllabuses were published for Technology in March 2002 and the Arts in June 2002. In April 1999, the Queensland School Curriculum Council approved the development of subject syllabuses for levels 5 and 6. Commencing in January 2000, subject area syllabus committees developed initial drafts for the five subject syllabuses, which were released in November 2000. Following consultation within the

educational community during 2001, second drafts were trailed in schools during 2002. After revision, the Queensland Studies Authority approved the five subject syllabuses in July 2003.

Implementation Process: The Queensland School Curriculum Council published initial in-service materials, consisting of a set of modules accompanying each syllabus and sourcebook, to familiarise teachers with the syllabuses and sourcebooks individually, in small groups or in facilitated workshops. In July 2001, Education Queensland released the *Curriculum Framework for Education Queensland Schools Years 1-10*, requiring each school to develop its own curriculum plan providing core learnings based on the Queensland syllabuses, teaching strategies, a range of assessment devices, and reports on student progress and achievement.

Revision Process: In 1999, the Queensland School Curriculum Council initiated reviews of the English and Mathematics syllabuses. Following trials and revisions, the Queensland Studies Authority published the revised Mathematics syllabus in October 2004 and the revised English syllabus in 2005. Each syllabus for grades 11 and 12 is reviewed every six years by a Subject Advisory Committee, which recommends to the Curriculum Committee the extent to which the syllabus should be revised. If revision is indicated, the Subject Advisory Committee revises or develops a new syllabus. After approval by the Queensland Studies Authority, the revised syllabus is trialed and piloted in selected schools before implementation.

Degree of State Control over Materials' Adoption: Reviewers advise AccessEd of Education Queensland about the selection of a multiple number of recommended materials listed in Classroom Resource Reviews, which are disseminated to schools to assist teachers select materials. The Queensland Studies Authority convenes subject advisory committees, which identify from materials in use a multiple number of recommended materials for lists published in syllabuses for grades 11 and 12.

Degree of Local Control over Materials' Adoption: School-based learning resources selection advisory groups oversee teachers selecting materials from Classroom Resource Reviews provided by AccessEd for kindergarten to grade 12, and syllabuses provided by the Queensland Studies Authority for grades 11 and 12.

Strategies Relating to Materials: The sourcebook modules present lesson plans, which list professional and curriculum materials consisting of CD-ROMs and web sites. Education Queensland maintains on AccessEd's web site, Classroom Resource Reviews, a searchable database of reviews on textbooks, supplementary materials, reference materials, resource kits, multimedia materials, computer software and web sites.

South Australia

Title of State Curriculum: South Australian Curriculum Standards and Accountability Framework

Components: The South Australian Curriculum Standards and Accountability Framework, which organises key ideas and standards by strands, provides guidelines for schools to develop programs, assess student progress, implement additional assistance and report outcomes.

Key Learning Areas: The South Australian Curriculum Standards and Accountability Framework organises key learning areas into three bands. Physical Self, Psychological Self, and Thinking and Communicating Self apply to birth to 3 years of age. Arts and Creativity, Communication and Language, Design and Technology, Diversity, Health and Physical Development, Self and Social Development, and Understanding our World apply to 3 years of age to reception. Arts, Design and Technology, English, Health and Physical Education, Languages, Mathematics, Science, and Society and Environment apply to reception to grade 12.

Grade Ranges: early years (birth to 2); primary years (3 to 5); middle years (6 to 9); and senior years (10 to 12)

Developmental Process: Following a process of public review, the South Australia Department of Education and Children's Services published a declaration in 1997 affirming the agency's fundamental purpose. The declaration established five strategic directions: developing the individual and society; achieving unity through diversity; strengthening community; creating a spirit of enterprise; and becoming global citizens. In order to reflect the philosophical and educational parameters articulated in the declaration, the South Australia Department of Education, Training and Employment released a curriculum statement in March 1998. In 1999, the Department of Education, Training and Employment aligned the rationale presented in the curriculum statement with a new policy on school management as a basis for integrating the existing curriculum documents. A Steering Committee, supported by four curriculum band reference groups and 20 experts' working groups, was appointed to oversee their integration. In May 1999, more than 1,000 teachers, participating in workshops and teleconferences at 28 sites across South Australia, were consulted about the existing curriculum documents used in South Australia in order to provide an information base to develop a new curriculum framework. A consortium of 37 educators from the University of South Australia and the Council for Educational Associations of South Australia, appointed in August 1999 to form a Writing Team, produced a preliminary draft framework in November 1999. An evaluation of the draft contracted to the Erebus Consulting Group involved the collection of responses from educators by a questionnaire, as well as interviews and focus group sessions with the curriculum band reference groups and experts' working groups. The evaluation report presented recommendations to direct the Writing Team in preparing a trialing draft, which was trialed in more than 100 schools, and also reviewed in all other schools between March and May of 2000. The responses from the evaluation were used to develop the South Australian Curriculum Standards and Accountability Framework, which was approved by

the chief executives of the public, Catholic and independent sector agencies in November 2000 before being published in January 2001.

Implementation Process: During 2000 and 2001, the Department of Education, Training and Employment provided professional development for site leaders to facilitate implementation of the South Australian Curriculum Standards and Accountability Framework. Beginning in July 2000, South Australian teachers developed teaching and assessing guides presenting examples of units of work based on models advocated by educational consultants, learning and assessing materials, and materials to support specific needs aligned to the South Australian Curriculum Standards and Accountability Framework. From 2002, implementation of the South Australian Curriculum Standards and Accountability Framework by district and cluster implementation groups was coordinated by the SACSA Implementation Steering Committee. In 2001 and 2002, the Department of Education and Children's Services formed local educator networks, conducted essential learnings field projects, undertook a project in interdisciplinary curriculum in the primary and middle years, and funded grants for teachers to implement programs to promote multicultural education and counter racism. In 2003, the Department of Education and Children's Services conducted the Teaching Resources Project in which primary teachers articulated descriptors to link the key ideas and outcomes for English and Mathematics in the South Australian Curriculum Standards and Accountability Framework.

Revision Process: Throughout implementation, teachers' responses to using the South Australian Curriculum Standards and Accountability Framework were collected to inform refinement. Each curriculum statement developed by the Senior Secondary Assessment Board of South Australia for grades 11 and 12 is revised according to a schedule based on information collected during evaluations. The Education Standing Committee proposes an annual work plan detailing subjects due for revision. Subjects, listed for revision, are evaluated, and a development plan is prepared for the Subject Advisory Committee. The incomplete revised draft, which is prepared by a writing team, is presented to a mid-point panel for review. Following completion, the revised draft is presented for consultation within the educational community, revised and approved by the Subject Accreditation Panel.

Degree of State Control over Materials' Adoption: The Senior Secondary Assessment Board of South Australia convenes subject advisory committees, which identify from materials in use, recommended materials for lists published in support materials accompanying curriculum statements for grades 11 and 12. The Text Selection Committee selects a multiple number of approved materials for the state list of literary texts for English in grade 12 adopted by the Senior Secondary Assessment Board of South Australia.

Degree of Local Control over Materials' Adoption: School review committees oversee teachers selecting materials in schools.

Strategies Relating to Materials: The teaching and assessing guides present lesson plans, which list professional and curriculum materials consisting of web sites, audiovisual and print materials. In October 2004, the Department of Education and Children's Services released *Choosing and Using Teaching and Learning Materials: Guidelines for Preschools and Schools*, a revised version of *Selection and Access for Books and Learning Materials: Guidelines for Schools* released in May 1987. The document presents guidelines for schools and preschools to develop and implement selection procedures, and address concerns about controversial materials.

Tasmania

Title of State Curriculum: Essential Learnings Framework

Components: The Essential Learnings Framework, which organises key element outcomes by the key elements of the essential learnings, provides a framework for designing and evaluating learning and teaching programs consisting of two components: Essential Learnings Framework 1; and Essential Learnings Framework 2. The Learning, Teaching and Assessment Guide documents examples of curriculum implementation in schools, and presents resources for effective teaching, student assessment, professional development, school-based collaborative planning and organisation, and parental and community involvement.

Key Learning Areas: Key learning areas are not specified in the Essential Learnings Framework.

Grade Ranges: standard 1 (K); standard 2 (2); standard 3 (5); standard 4 (8); standard 5 (10); 11 to 12

Developmental Process: Following the release in February 2000 of draft proposals for education, training and the provision of information, a Consultation Team was appointed to conduct a three-year review of the school curriculum consisting of three phases: clarifying values and purposes; specifying content; and developing teaching and assessment practices. Beginning in June 2000, district reference groups led more than 6,900 teachers, child-care professionals, business people, community members and students at district and student forums, parent and child-care discussion sessions, and numerous meetings focusing on clarifying the values and purposes of public education. The report on the consultation, released in October 2000, led to the publication of a statement in December 2000 identifying seven values and six purposes as important. The statement of values and purposes formed the basis for developing an outline of essential learnings derived from the suggestions of many groups and individuals. Produced in December 2000, this outline was elaborated in February 2001 to form an initial draft of 'emerging' essential learnings organised into four categories of working organisers. Responses collected from a statewide review were used to revise the initial draft to produce 'working' essential learnings organised into five categories, each containing a description and several key elements.

Selected in November 2000, 20 partnership schools worked with the Consultation Team to refine the 'working' essential learnings, determine learning outcomes and standards to describe knowledge, skills and competencies, and identify teaching and assessment practices consistent with the values and purposes. In March 2002, Essential Learnings Framework 1 presenting a statement of values and purposes, descriptions and key elements of the essential learnings, a set of culminating outcomes, and a set of learning, teaching and assessment principles, was released. More than 40 schools worked with the Consultation Team during 2002 to specify sets of expectations for students at different levels to provide the basis for the outcomes and standards statement. In March 2003, Essential Learnings Framework 2 consisting of an Introduction to Outcomes and Standards, Outcomes and Standards, and a Learners and Learning Provision Statement, was released. Developed by the Consultation Team and 53 partnership schools, the Learning, Teaching and Assessment Guide was released in April 2003. In 2004, the Tasmania Department of Education released a guide to assist child-carers, a set of modules to support school leaders conduct workshops, a booklet and a CD-ROM to assist teachers plan more effectively, and six booklets and a CD-ROM to assist school leaders work with school communities. Early in 2003, the Department of Education disseminated a set of discussion papers and convened regional and stakeholder forums to design a strategy for post-compulsory education. Released in December 2003, the strategy called Tasmania: A State of Learning presented a vision, purposes and values to guide post-compulsory education, and set out outcomes to be achieved through a range of initiatives organised under four tracks: guaranteeing futures; ensuring essential literacies; enhancing adult learning; and building learning communities. One initiative involved reviewing the curriculum for grades 11 and 12 to develop a curriculum framework aligned to the Essential Learnings Framework, identify a model for syllabus development, and address issues relating to delivery, organisation and resources for post-compulsory institutions. Facilitated by a project team supported by school-based project officers, the curriculum review was initiated in February 2004 through discussions with the post-compulsory educational community about values, purposes and outcomes, and conversations with independent schools and providers.

Implementation Process: Six teams implemented the Essential Learnings Framework over several years concluding in 2005. The Curriculum Support Group coordinated planning and assessment activities. The Resource Support Team coordinated the development of comprehensive support materials for schools. The Professional Learning Group planned and facilitated a professional learning program. The Leadership and School Transformation Team coordinated work on school organisation, community liaison, transformation and leadership. A team of three regional principal leaders supported principals in implementing the Essential Learnings Framework. Seven district leaders supported district superintendents in curriculum, pedagogical and assessment innovation through the Essential Learnings Framework. In 2003, the Department of Education

initiated the Essential Learnings Regional Professional Learning Program, consisting of four components on curriculum planning, powerful pedagogies, assessment and moderation, and leading learning.

Revision Process: No process has been determined for revising the Essential Learnings Framework. The Learning, Teaching and Assessment Guide is designed to be dynamic, and undergo refinement and expansion on the Internet. Each syllabus developed by the Tasmanian Qualifications Authority for grades 11 and 12 is revised every four years. The revised draft, which is prepared by a Writing Team, is presented to teachers for consultation on proposed changes. The Accreditation Committee approves each final draft syllabus.

Degree of State Control over Materials' Adoption: The Tasmanian Qualifications Authority convenes writing teams, which identify from materials in use a multiple number of recommended materials for lists published in syllabuses for grades 11 and 12. The Tasmanian Qualifications Authority selects a multiple number of approved materials for state lists of literary texts for English, English Literature and World Literature in grade 12 adopted by the Tasmanian Qualifications Authority.

Degree of Local Control over Materials' Adoption: Curriculum resources development committees oversee teachers selecting materials in schools from kindergarten to grade 12, and syllabuses provided by the Tasmanian Qualifications Authority for grades 11 and 12.

Strategies Relating to Materials: The sample units in the Learning, Teaching and Assessment Guide include lists of curriculum materials consisting of web sites, audiovisual and printed materials.

Victoria

Title of State Curriculum: Curriculum and Standards Framework

Components: The Curriculum and Standards Framework, which organises learning outcomes and indicators by strands, provides guidelines for schools in planning programs and assessment. Course Advice presents suggested learning activities, curriculum resources, and assessment techniques.

Key Learning Areas: The Curriculum and Standards Framework is organised into an English as a Second Language Companion and eight learning areas: Arts; English; Health and Physical Education; Languages other than English; Mathematics; Science; Studies of Society and Environment; and Technology

Grade Ranges: level 1 (preparatory); level 2 (2); level 3 (4); level 4 (6); level 5 (8); level 6 (10); 11 to 12

Developmental Process: In September 1984, the Minister for Education issued a paper, which supported decentralising curriculum development to local school communities by proposing that the school curriculum should be based in a framework with student outcomes being defined by school councils. A three-phase Curriculum Frameworks

Project, initiated in 1984 to support this policy, involved forming ten writing teams to develop an overview statement, and statements in each of nine learning areas, and then in 1985 disseminating a discussion paper for consultation. The second phase involved reviewing the results of the consultation, and revising the ten statements during 1986. The third phase involved publishing and implementing the School Curriculum and Organisation Framework in 1988. In July 1993, the Minister requested the Board of Studies Victoria to examine whether the national statements and profiles provided an adequate basis for developing a new curriculum framework. Finding they provided an adequate foundation, the Board of Studies appointed eight key learning area committees in November 1993 to develop the draft, which was distributed for a statewide review resulting in more than 5,000 responses. Following revision, the Minister approved the Curriculum and Standards Framework in November 1994. Released in February 1995, the Curriculum and Standards Framework formed a key component of the systemic reform initiative, Schools of the Future. In collaboration with the Catholic and independent sectors, the Victoria Department of Education developed Course Advice documents, which were distributed to schools on completion. In April and May of 2003, round-table discussions on school improvement, curriculum reform, professional and workforce development, and innovation and excellence led the Minister to deliver a speech calling for reform of the education system. Appointed in August 2003 to develop a ministerial statement, four leadership groups, consisting of principals and teachers, visited more than 50 schools and conducted 27 regional forums across Victoria to inform their views. In addition, an ICT Think Tank was formed to advise on information and communication technology, whilst a web site was established to collect public responses to an on-line survey. Released in November 2003, the Blueprint for Government Schools outlined three directions for reform. First, student learning needs would be met by developing a framework of essential learning, improving student assessment, promoting principles for teaching and learning, and applying a new approach for allocating resources. Second, leadership capacity would be built by improving selection of and advice for principals, and establishing focused professional development for teachers. Third, a model for school review that takes account of differences between schools would be implemented, and a fund to drive school improvement would be established. In 2003, the Victorian Curriculum and Assessment Authority analysed national and international curriculum and standards documents to develop a discussion paper outlining a new approach for the curriculum. Released in February 2004, the paper was presented for discussion by educators at 18 forums held across Victoria in March 2004, and revised to form a consultation paper. Dissemination of the consultation paper, which occurred at an invitational conference held in March 2004, was supported by 10 seminars convened to assist curriculum leaders facilitate discussions on the paper in schools. Almost 1,000 responses collected by an on-line survey indicated a strong level of endorsement for the proposed reform. The data from

the survey were taken into account in developing the draft for the Framework of Essential Learning, which was released late in 2004.

Implementation Process: The Curriculum and Standards Framework was disseminated to schools in 1995. The recommended procedure for implementation involved following a sequence of seven steps. First, the curriculum provision in the school was reviewed. Second, the components of current programs were matched to the content coverage in the Curriculum and Standards Framework. Third, key learning area priorities were established. Fourth, school curriculum development priorities were determined. Fifth, strategies to address school curriculum priorities were designed. Sixth, programs were planned. Seventh, plans for monitoring and evaluation were designed. The Board of Studies published a series of four documents under the title, *Using the CSF*, in 1995 and 1996, a series of seven general and key learning area advice booklets, and a guide for primary teachers to plan science programs. In February and March of 2000, the Department of Education held ten conferences to assist curriculum specialists in regional offices to provide school-based professional development and curriculum coordinators to implement the Curriculum and Standards Framework II. In 2000, the Board of Studies published an information kit to assist principals implement the Curriculum and Standards Framework II. Teachers, who are designated trainers in the use and application of the Course Advice CD-ROM, provide workshops for teachers across Victoria on its use for curriculum planning. The Victoria Department of Education, Employment and Training established two information technology projects to facilitate implementation of the Curriculum and Standards Framework II. The web site, IdeaBank, contains a searchable database of teacher-developed lesson plans aligned to the Curriculum and Standards Framework, and the web site, Practical Resources and Interactive Science Materials contains a searchable database of learning activities for science.

Revision Process: The Minister initiated a review of the Curriculum and Standards Framework in May 1998. The CSF 2000 Advisory Committee consulted representatives from groups within the educational community to develop a directions paper, which was disseminated in August 1998 to form the basis for forums with 1,200 principals held at 21 sites across Victoria during August and September of 1998. On the basis of the responses, CSF key learning area committees revised each of the eight key learning areas over a six-month period commencing in October 1998. In April 1999, the revised draft, together with a questionnaire administered in computer disk format, were distributed to schools for a field review resulting in over 700 responses, which were overwhelmingly positive about the draft. Following final revision, the Curriculum and Standards Framework II was published in 2000. In June 1999, the Department of Education contracted 50 writers, who revised the Course Advice documents to align them to the Curriculum and Standards Framework II. Completed in November 1999, the Course Advice documents were published on a CD-ROM in October 2000. Study review committees in the case of major

revisions or study writing teams in the case of minor revisions revise studies for grades 11 and 12 every four years. The Study Review Committee prepares a report indicating whether the proposal for revision meets the curriculum and assessment principles for studies, and collects data from teachers to determine the scope of the revision. Following development, the draft is presented for public and expert reviews before being approved by the Victorian Curriculum and Assessment Authority.

Degree of State Control over Materials' Adoption: The Victorian Curriculum and Assessment Authority convenes study review committees, which identify from materials in use a multiple number of recommended materials for lists published in studies for grades 11 and 12. The English Text Selection Panel selects a multiple number of approved materials for the state lists of literary texts for Literature and English-ESL in grade 12 adopted by the Victorian Curriculum and Assessment Authority.

Degree of Local Control over Materials' Adoption: School councils oversee teachers selecting materials in schools for the preparatory year to grade 10, and from studies provided by the Victorian Curriculum and Assessment Authority for grades 11 and 12.

Strategies Relating to Materials: Each Course Advice document consists of several components, including a bibliography of curriculum resources, which have been referenced within sample units of work at each level. Practical Resources and Interactive Science Materials provides a searchable database of learning activities.

Western Australia

Title of State Curriculum: Curriculum Framework for Kindergarten to Year 12 Education in Western Australia

Components: The Curriculum Framework, which organises overarching and learning area outcomes by strands, provides guidelines for schools in planning programs and ensuring students achieve outcomes.

Key Learning Areas: Arts; English; Health and Physical Education; Languages other than English; Mathematics; Science; Society and Environment; Technology and Enterprise

Grade Ranges: early childhood (K to 3); middle childhood (3 to 7); early adolescence (7 to 10); late adolescence and early adulthood (10 to 12)

Developmental Process: In June 1994, the Minister for Education appointed the Ministerial Committee to Review Curriculum Development to review current processes, examine future options, and evaluate the financial implications and accountability of its recommendations. Consisting of a two-stage process, the review involved evaluating existing curriculum provisions and deriving a set of recommendations, and then preparing an organisational model and implementation plan. In 1995, the Committee recommended that a curriculum council should be formed to develop a curriculum framework. Appointed by the Interim Curriculum Council formed in June 1996, learning area committees developed a draft framework in April 1997 in collaboration with a Values

Consultative Committee, a Working Party with expertise on inclusiveness, and community reference groups. The draft framework was distributed to teachers and interest groups in July 1997 for a six-month review involving a series of public meetings, focus group sessions and a student forum. A survey identified from more than 1,800 responses that whilst the respondents agreed the curriculum framework would enable more effective curriculum planning, there were features that some respondents wished to be changed, and that its implementation would require extensive professional development. The Curriculum Framework Committee revised the draft over six months before the Curriculum Council of Western Australia, which had been established in August 1997, approved the Curriculum Framework in 1998. With the publication of the Curriculum Framework, it became necessary to determine if the existing system of post-compulsory education was compatible with its intentions. In August 1998, the Curriculum Council of Western Australia appointed the Vision Implementation Working Group, which determined the directions for a Post-Compulsory Review. In consultation with a Community Reference Group, a Student Reference Group and several focus groups, the Vision Implementation Working Group examined the extent to which post-compulsory courses could be aligned to the outcomes in the Curriculum Framework, and released a discussion paper in October 1999. Review of the discussion paper involved 350 information sessions and the collection of 600 submissions. Analysis of the responses led to recommendations that a single curriculum structure of approximately 50 courses of study should be aligned to the Curriculum Framework. After an eight-month review involving information sessions, public meetings and exploratory course of study activities, the recommendations were revised on the basis of responses to an on-line survey and written submissions, and presented to the Minister in October 2001. In response, the Minister released a report in March 2002 supporting the development of approximately 50 courses of study aligned to the Curriculum Framework. In July 2003, the Curriculum Council of Western Australia released a plan presenting a process for developing and implementing the new courses of study between 2003 and 2009.

Implementation Process: The Curriculum Framework was disseminated to schools in July 1998 for implementation over a five-year period from 1999 to 2004. The Western Australia Department of Education and Training, the Catholic Education Office of Western Australia and the Association of Independent Schools of Western Australia collaborated to produce a set of guidelines for professional development to provide a common approach to implementing the Curriculum Framework. School systems were required to establish their own strategic plans that identified the types of professional development and the sequence for achieving this over the implementation phase. The Curriculum Council of Western Australia adopted a four-phase model for delivery and accountability. First, teachers gained an understanding of the Curriculum Framework and reviewed existing educational programs. Second, teachers explored ways of implementing the Curriculum Framework within their classrooms and across levels of schooling and within learning areas. Third,

teachers refined their understanding about the Curriculum Framework and implemented the learning area outcomes in their classrooms. Fourth, teachers were equipped with the knowledge and skills to implement the Curriculum Framework according to statutory requirements. In order to support the implementation of the Curriculum Framework, the Curriculum Council of Western Australia released three sets of professional materials. A guide presented a whole-school approach to implementing the Curriculum Framework. A set of nine books presented case studies focusing on teachers' experiences in a learning area or across the curriculum. A bibliography listed resources. In 2001, the Curriculum Council of Western Australia published a four-part series of professional materials providing an understanding of outcomes, a focus on achievement, a plan for learning, and a statement on curriculum collaboration.

Revision Process: The Curriculum Council of Western Australia reviews and revises the Curriculum Framework and courses of study through a collaborative and consultative process to take into account perceived adjustments indicated by schools. Three years prior to implementation of each course of study for grades 11 and 12, a Syllabus Committee prepares a statement of intent in consultation with schools. The statement of intent is referred to the Curriculum Council of Western Australia, which approves the continuation or suspension of the revision process. If continued, each Syllabus Committee revises the course of study, which is submitted to the Curriculum Council of Western Australia for approval two years prior to implementation.

Degree of State Control over Materials' Adoption: Reviewers advise the Curriculum Materials Information Services of the Department of Education and Training about the selection of a multiple number of recommended materials. These are listed in three review journals, *Fiction Focus*, *Primary Focus* and *Technology Focus*, which are disseminated to schools to assist teachers select materials. The state level selection process includes a post-recommendation caravan of materials for teachers of kindergarten to grade 6. The Curriculum Council of Western Australia convenes syllabus committees, which identify from materials in use a multiple number of recommended materials for lists published in syllabuses for grades 11 and 12.

Degree of Local Control over Materials' Adoption: Teachers select materials from lists provided by the Curriculum Materials Information Services for kindergarten to grade 12, and syllabuses provided by the Curriculum Council of Western Australia for grades 11 and 12.

Strategies Relating to Materials: The Department of Education and Training maintains the Curriculum Materials Information Services, which provide a searchable database of reviews on materials in all media for grades K to 6, reading materials for grades 7 to 12, computer software for grades K to 12, and web sites.

9.4 Conclusion

Following the referral of the national statements and profiles to the states and territories in July 1993, each system engaged in consultations within its own educational community to align them to its curriculum or to implement them. Systemic reform in New South Wales, leading to the passage of the Education Reform Act in 1990, had as an important element the definition of a core curriculum. This core curriculum became the paramount structure for organising the curriculum after the Review of Outcomes and Profiles in 1995 rejected aligning the syllabuses with the national statements and profiles. In Victoria and the Australian Capital Territory, existing curriculum frameworks were readily aligned to the national statements and profiles. South Australia and Tasmania, however, chose to implement the national statements and profiles in their existing forms, whilst the Northern Territory developed a curriculum derived from the recommendations of a review concluded in 1992. This position changed during the course of the 1990s. Curriculum reviews concluded in Queensland in 1994, Western Australia in 1995 and the Northern Territory in 1999 led to the development of syllabuses or frameworks based on the national statements and profiles. Systemic reforms undertaken in South Australia in 1999 and Tasmania in 2000 also led to the development of frameworks based on the national statements and profiles.

There is little evidence that these reforms have substantially altered the role played by curriculum resources. The pattern, in which separate agencies have gained responsibility for the curriculum at the compulsory and post-compulsory levels, has been largely retained. Although state education agencies in New South Wales, Queensland and Western Australia have centralised certain aspects of the procedures for selecting materials at the compulsory level, they have failed to centralise all the features of these procedures to provide state-level systems for controlling the purchase, selection and distribution of materials. However, the expertise gained from centralising certain aspects of these procedures has given these state education agencies the capacity to design databases of information on materials to assist teachers to identify and select resources to support syllabuses and frameworks. As responsibility for selecting materials is decentralised to schools in all states and territories at the compulsory level, few innovative strategies have been devised to align materials to syllabuses and frameworks. This situation is especially true of those states and territories in which the selection of materials is fully decentralised. They generally rely solely on providing teachers with lists of materials suitable for supporting syllabuses and frameworks.

This situation contrasts with the role of accreditation agencies at the post-compulsory level. Accreditation agencies in all states and territories continue to exercise a degree of

centralised control over the approval of curriculum resources. In all states and territories, except the Australian Capital Territory, subject-based committees with responsibilities for developing syllabuses identify from materials in use multiple numbers of recommended materials listed in syllabuses. In addition, subject-based committees in New South Wales, Victoria, South Australia and Tasmania select multiple numbers of approved literary texts for English courses, which are adopted by accreditation agencies. Furthermore, a committee of community representatives, appointed in New South Wales, screens literary texts for English courses for social content.

CHAPTER 10

CONCLUSION

The purpose of this chapter is to examine how each of the objectives set out in Chapter 1 has been addressed in the findings presented in the thesis. However, the relationships between the objectives and other theoretical propositions advanced in Chapter 3 are complex. The representation of these relationships, set out below in Table 14, guides the presentation of the major findings of the study. The Key Findings section summarises the findings of the study relating to the development, selection and use of materials. The Discussion section carries out five functions. First, it presents an interpretation of why these phenomena are occurring by comparing features of the materials' marketplaces of the particular countries. Second, it presents the limitations of the study. Third, it integrates the interpretation of the findings by assessing the impact of curriculum and standards-based reforms on the materials' marketplace in each country. Fourth, it integrates the findings into an existing model. Fifth, it suggests further research, replications and refinements to provide directions for extension.

10.1 Relationships between Propositions

The subject matter presented in the thesis contains several key propositions that relate to the objectives. First, each objective refers to data relating to antecedents, transactions or outcomes. Second, the characteristics of data relating to some objectives may be classified according to the decision settings represented in the CIPP Model described in Chapter 3. Third, each objective refers to particular aspects relating to the development, selection or use of materials. Fourth, each objective refers to settings within a particular country or countries. Fifth, each objective has been addressed in a particular chapter. Table 14 presents the relationships between these propositions.

10.2 Key Findings

10.2.1 Antecedents

10.2.1.1 Development of Materials

The content analysis of research literature revealed that the publishing industry in the United States, founded in the mid-nineteenth century, became a key institution within the materials' marketplace during the twentieth century. The roles of authors, editors and sales people in developing and marketing textbooks and other materials were formalised, and new technological inventions were incorporated into the publishing process during this period. However, mergers and takeovers within the publishing industry in the late

TABLE 14
SUMMARY OF KEY ATTRIBUTES

Objective	Type of Activity	Decision Setting of Activity	Materials' Aspects	Settings	Chapter
1. to trace and re-construct the processes used by the publishing industry to produce materials, and by state education agencies to select and use materials	antecedent, prior to standards-based and curriculum reforms	activities are not classified	activities of publishing companies for developing materials, committees for selecting materials, and learners for using materials	United States of America	2
2. to trace and re-construct the impact of the excellence debate and standards-based reform on effecting change in the materials' market-place	antecedent, prior to standards-based and curriculum reforms	activities are not classified	activities of publishing companies for developing materials, committees for selecting materials, and learners for using materials	United States of America	3

TABLE 14
(cont.)

SUMMARY OF KEY ATTRIBUTES

Objective	Type of Activity	Decision Setting of Activity	Materials' Aspects	Settings	Chapter
3. to describe activities of national associations of publishers and survey publishers on their perceptions about the impact of standards-based and curriculum reforms on their materials	trans-action, occurring during standards-based and curriculum reforms	activities are classified as either homeo-static, incremental or neo-mobilistic	activities of publishing companies for developing materials	United States of America, United Kingdom, and Australia	4
4. to trace and analyse the impact of national curriculum reforms on the materials' marketplace by describing activities for developing, selecting and using materials	trans-action, occurring during curriculum reforms	except for the functions of selection committees, activities for developing, prescribing and using materials are classified as either homeo-static, incremental or neo-mobilistic	activities of publishing companies for developing materials, functions of selection committees, activities to support teachers prescribe materials, activities of learners to use materials	United Kingdom (England, Wales, Scotland, Northern Ireland)	5

TABLE 14
(cont.)

SUMMARY OF KEY ATTRIBUTES

Objective	Type of Activity	Decision Setting of Activity	Materials' Aspects	Settings	Chapter
5. to trace and analyse the impact of standards-based reforms on the materials' market-place by describing activities for developing, selecting and using materials	trans-action, occurring during standards-based and curriculum reforms	except for the functions of selection committees, activities for developing, prescribing and using materials are classified as either homeo-static, incremental or neo-mobilistic	activities of publishing companies for developing materials, functions of selection committees, activities to support teachers prescribe materials, activities of learners to use materials	United States of America (national level)	6
6. to trace, analyse and classify information about state-level standards-based reforms, and relate this information to various aspects referring to materials	trans-action, occurring during standards-based and curriculum reforms	except for the functions of selection committees, activities for developing, prescribing and using materials are classified as either homeo-static, incremental or neo-mobilistic	activities of publishing companies for developing materials, functions of selection committees, activities to support teachers prescribe materials, activities of learners to use materials	United States of America (state level)	7

TABLE 14
(cont.)

SUMMARY OF KEY ATTRIBUTES

Objective	Type of Activity	Decision Setting of Activity	Materials' Aspects	Settings	Chapter
7. to trace and analyse the impact of national curriculum collaboration on the materials' marketplace by describing activities for developing, selecting and using materials	trans-action, occurring during curriculum reforms	except for the functions of selection committees, activities for developing, prescribing and using materials are classified as either homeo-static, incremental or neo-mobilistic	activities of publishing companies for developing materials, functions of selection committees, activities to support teachers prescribe materials, activities of learners to use materials	Australia (national level)	8
8. to trace, analyse and classify information about state curricula, and relate this information to various aspects referring to materials	trans-action, occurring during curriculum reforms	except for the functions of selection committees, activities for developing, prescribing and using materials are classified as either homeo-static, incremental or neo-mobilistic	activities of publishing companies for developing materials, functions of selection committees, activities to support teachers prescribe materials, activities of learners to use materials	Australia (state level)	9

twentieth century led to greater concentration of turnover within a handful of large companies, whilst new publishers were consigned the function of niche publishing in the marketplace.

10.2.1.2 Selection of Materials

The content analysis of research literature identified differences between the levels of decision-making occurring in the selection process between different states in the United States using centralised or decentralised procedures. The findings indicated that the decision-making process in centralised procedures is more clearly defined by specific provisions, usually set out in statutes. These provisions lead to greater uniformity in centralised procedures, which exert a powerful influence in determining the content of materials, especially when coupled with high population concentrations found in large states. On the other hand, decentralised procedures are more responsive to the needs of teachers in selecting materials, but fail to project a strong market demand.

10.2.1.3 Use of Materials

The content analysis of research literature identified that the findings of large-scale studies supported a view that teachers and students use relatively few of the available materials in the marketplace for a high proportion of time in classrooms. More recently, case studies have challenged the assumption that teachers follow the curriculum presented in materials with an unquestioning acceptance, but assert that variations in the use of materials occur across subject areas, and through personal choices about the content of materials and their use.

10.2.1.4 Excellence Debate and the Role of Materials

National reports on American education, published during the excellence debate in the 1980s, gave prominence to the findings of research studies concerning problems in the ways materials are developed, selected and used. Prompted by these research studies, a cadre of scholars emerged who devoted much time and effort to researching particular issues associated with materials and the curriculum. The excellence debate, which prompted policy-makers to realise that materials form an important element in educational reform, led to a series of initiatives to reform the system for developing, selecting and using materials. A textbook improvement project, funded in response to these initiatives, led to the publication of a report that became influential in informing policy-makers and educators about issues concerning quality in materials, and encouraging action to change the prevailing system.

10.2.2 Transactions

Transaction data were classified according to the characteristics of change defined in terms of the decision settings represented in the CIPP Model. The data take the form of an extensive range of activities relating to the development, selection and use of materials occurring within publishing and educational settings in the United Kingdom, the United States and Australia. The activities were identified from the information reported in the chapters referring to objectives 3 to 8. The procedure involved identifying all activities relating to developing, selecting and using materials separately according to country. Activities relating to the development and use of materials were identified for the United Kingdom by referring to chapters 4 and 5, the United States by referring to chapters 4, 6 and 7, and Australia by referring to chapters 4, 8 and 9. Activities relating to the selection of materials were identified for the United Kingdom by referring to Chapter 5, the United States by referring to chapters 6 and 7, and Australia by referring to chapters 8 and 9. Then the purpose for each activity was determined from information in these sources describing its attributes, and the activity was assigned to a category defining this purpose. The characteristics of decision-making associated with each category were identified, and these characteristics were used to classify the category as belonging to the homeostatic, incremental or neomobilistic decision setting. The tables, presented in the key findings reported in this chapter, summarise these activities according to category and decision setting.

10.2.2.1 Development of Materials

10.2.2.1.1 United Kingdom

The findings relate to objective 3 with reference to the national association of publishers, and objective 4 with reference to the development of materials. Table 15 presents a matrix indicating the organisations involved in national curriculum reform in the rows, and the categories of activities relating to the development of materials for meeting the National Curriculum orders reported in chapters 4 and 5 in the columns. The findings indicated that whilst publishing companies undertook an infinite number of activities, education agencies and other organisations conducted few activities associated with the development of materials. Publishing companies across the United Kingdom produced traditional, innovative and computer-based materials. Governmental agencies and other organisations in England, Scotland and Wales undertook six activities to improve or apply new solutions for developing materials to meet the requirements of the National Curriculum orders. No activities were undertaken in Northern Ireland. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. One category in each of the homeostatic, incremental and neomobilistic decision settings accounted for an infinite number of activities. Three other categories in the incremental decision setting accounted for one activity each. Within the

neomobilistic decision setting, one other category accounted for two activities, and another category accounted for one activity.

TABLE 15

MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS AND PUBLISHING COMPANIES TO DEVELOP MATERIALS FOR MEETING NATIONAL CURRICULUM ORDERS

Organisation	Category of Activities										
	1	2	3	4	5	6	7	8	9	10	11
<i>United Kingdom</i>											
Publishing companies	n	n	0	0	0	0	n	0	0	0	0
<i>England</i>											
Department for Education and Skills:											
- Consortium on											
Citizenship Education	0	0	0	0	0	0	0	0	1	0	0
Qualifications and Curriculum Authority:											
- Educational											
Resources Project	0	0	0	1	1	0	0	0	0	0	0
British Educational Communications and Technology Agency:											
- Teacher Resource											
Exchange	0	0	0	0	0	0	0	1	0	0	0
<i>Scotland</i>											
Scottish Consultative Council on the Curriculum											
- Standard Grade											
support materials	0	0	1	0	0	0	0	0	0	0	0
<i>Wales</i>											
Qualifications, Curriculum and Assessment Authority											
for Wales:											
- Commissioning											
Program	0	0	0	0	0	0	0	0	1	0	0
Total	n	n	1	1	1	0	n	1	2	0	0

TABLE 15
(cont.)

**MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS AND
PUBLISHING COMPANIES TO DEVELOP MATERIALS FOR MEETING NATIONAL
CURRICULUM ORDERS**

Key A: 1 = publishing companies develop and publish traditional materials (homeostatic decision setting); 2 = publishing companies develop and publish innovative materials (incremental decision setting); 3 = organisation develops and publishes innovative materials (incremental decision setting); 4 = organisation convenes a conference on improving the quality of materials (incremental decision setting); 5 = publishers' association and an organisation convene a committee to oversee collaboration on developing materials (incremental decision setting); 6 = organisation develops guidelines for developing materials (incremental decision setting); 7 = publishing companies develop and publish materials that incorporate computer-based technologies (neomobilistic decision setting); 8 = organisation publishes teacher-developed materials that incorporate computer-based technologies (neomobilistic decision setting); 9 = organisation commissions publishing companies to develop and publish materials (neomobilistic decision setting); 10 = organisation provides publishing companies with consultancy services for developing materials (neomobilistic decision setting); and 11 = organisation founds a research centre for improving the development of materials (neomobilistic decision setting).
Key B: n = infinite number.

10.2.2.1.2 United States

10.2.2.1.2.1 National Level

The findings relate to objective 3 with reference to the national association of publishers, and objective 5 with reference to the development of materials. Table 16 presents a matrix indicating the organisations involved in standards-based reform in the rows, and the categories of activities relating to the development of materials for meeting the national standards reported in chapters 4 and 6 in the columns. The findings indicated that whilst publishing companies undertook an infinite number of activities, education agencies, subject associations and other organisations conducted few activities associated with the development of materials. Publishing companies across the United States produced traditional, innovative and computer-based materials. Education agencies, subject associations and other organisations undertook nine activities to improve or apply new solutions for developing materials to meet the requirements of the national standards. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. One category in each of the homeostatic, incremental and neomobilistic decision settings accounted for an infinite number of activities. Within the incremental decision setting, one other category accounted for six activities, and another category accounted for one activity. Two other categories in the neomobilistic decision setting accounted each for one activity.

TABLE 16

**MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS AND
PUBLISHING COMPANIES TO DEVELOP MATERIALS FOR MEETING NATIONAL
STANDARDS**

Organisation	Category of Activities										
	1	2	3	4	5	6	7	8	9	10	11
Publishing companies <i>National Standards Projects</i>	n	n	0	0	0	0	n	0	0	0	0
National Center for History in the Schools: - revised History Standards	0	0	1	0	0	0	0	0	0	0	0
National Council for Geographic Education: - Geography Standards											
- University of Colorado	0	0	1	0	0	0	0	0	0	0	0
- Association of American Geographers	0	0	1	0	0	0	0	0	0	0	0
National Council of Teachers of English and International Reading Association: - English Language Arts Standards	0	0	1	0	0	0	0	0	0	0	0
National Council on Economic Education and Foundation for Teaching Economics: - Economics Standards	0	0	1	0	0	0	0	0	0	0	0
National Science Foundation: - Instructional Materials Development Program	0	0	1	0	0	0	0	0	0	0	0
American Association for the Advancement of Science: - Project 2061	0	0	0	1	0	0	0	0	0	0	1
Federal Resources for Educational Excellence	0	0	0	0	0	0	0	0	1	0	0
Total	n	n	6	1	0	0	n	0	1	0	1

TABLE 16
(cont.)

MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS AND PUBLISHING COMPANIES TO DEVELOP MATERIALS FOR MEETING NATIONAL STANDARDS

Key A: 1 = publishing companies develop and publish traditional materials (homeostatic decision setting); 2 = publishing companies develop and publish innovative materials (incremental decision setting); 3 = organisation develops and publishes innovative materials (incremental decision setting); 4 = organisation convenes a conference on improving the quality of materials (incremental decision setting); 5 = publishers' association and an organisation convene a committee to oversee collaboration on developing materials (incremental decision setting); 6 = organisation develops guidelines for developing materials (incremental decision setting); 7 = publishing companies develop and publish materials that incorporate computer-based technologies (neomobilistic decision setting); 8 = organisation publishes teacher-developed materials that incorporate computer-based technologies (neomobilistic decision setting); 9 = organisation commissions publishing companies to develop and publish materials (neomobilistic decision setting); 10 = organisation provides publishing companies with consultancy services for developing materials (neomobilistic decision setting); and 11 = organisation founds a research centre for improving the development of materials (neomobilistic decision setting).
Key B: n = infinite number.

10.2.2.1.2.2 State Level

The findings relate to objective 6 with reference to the development of materials. Table 17 presents a matrix indicating the states in the rows, and the categories of activities relating to the development of materials for meeting state standards reported in Chapter 7 in the columns. The findings indicated that state education agencies and other organisations have developed few materials to support state standards. They undertook 16 activities to maintain or apply new solutions to develop materials. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. The homeostatic decision setting was unrepresented. One category within the incremental decision setting accounted for two activities (12.5 percent). One category within the neomobilistic decision setting accounted for 13 activities (81.3 percent), whilst another category within the neomobilistic decision setting accounted for one activity (6.3 percent).

TABLE 17

MATRIX OF ACTIVITIES USED BY STATE EDUCATION AGENCIES TO DEVELOP MATERIALS FOR MEETING STATE STANDARDS

State	Category of Activities										
	1	2	3	4	5	6	7	8	9	10	11
- Alabama	0	0	0	0	0	0	0	1	0	0	0
- Alaska	0	0	0	0	0	0	0	0	0	0	0
- Arizona	0	0	0	0	0	0	0	0	0	0	0
- Arkansas	0	0	0	0	0	0	0	0	0	0	0
- California	0	0	0	0	0	0	0	1	0	0	0

TABLE 17
(cont.)

**MATRIX OF ACTIVITIES USED BY STATE EDUCATION AGENCIES TO DEVELOP
MATERIALS FOR MEETING STATE STANDARDS**

State	Category of Activities										
	1	2	3	4	5	6	7	8	9	10	11
- Colorado	0	0	0	0	0	0	0	1	0	0	0
- Connecticut	0	0	0	0	0	0	0	0	0	0	0
- DoDEA	0	0	0	0	0	0	0	0	0	0	0
- District of Columbia	0	0	0	0	0	0	0	0	0	0	0
- Florida	0	0	0	0	0	0	0	0	0	0	0
- Georgia	0	0	0	0	0	0	0	1	0	0	0
- Hawaii	0	0	0	0	0	0	0	0	0	0	0
- Idaho	0	0	0	0	0	0	0	0	0	0	0
- Illinois	0	0	0	0	0	0	0	0	0	0	0
- Indiana	0	0	0	0	0	0	0	0	0	0	0
- Iowa	0	0	0	0	0	0	0	0	0	0	0
- Kentucky	0	0	0	0	0	0	0	0	0	0	0
- Louisiana	0	0	0	0	0	0	0	1	0	0	0
- Maine	0	0	0	0	0	0	0	1	0	0	0
- Maryland	0	0	0	0	0	0	0	0	0	0	0
- Massachusetts	0	0	0	0	0	0	0	0	0	0	0
- Michigan	0	0	0	0	0	0	0	0	0	0	0
- Minnesota	0	0	0	0	0	0	0	0	0	0	0
- Mississippi	0	0	0	0	0	0	0	0	0	0	0
- Missouri	0	0	0	0	0	0	0	0	0	0	0
- Montana	0	0	0	0	0	0	0	0	0	0	0
- Nebraska	0	0	0	0	0	0	0	0	0	0	0
- Nevada	0	0	0	0	0	0	0	0	0	0	0
- New Hampshire	0	0	0	0	0	0	0	0	0	0	0
- New Jersey	0	0	0	0	0	0	0	0	0	0	0
- New Mexico	0	0	0	0	0	0	0	1	0	0	0
- New York	0	0	0	0	0	0	0	1	0	0	0
- North Carolina	0	0	0	0	0	0	0	1	0	0	0
- North Dakota	0	0	0	0	0	0	0	0	0	0	0
- Ohio	0	0	0	0	0	0	0	0	0	0	0
- Oklahoma	0	0	0	0	0	0	0	0	0	0	0
- Oregon	0	0	0	0	0	0	0	0	0	0	0
- Pennsylvania	0	0	0	0	0	0	0	0	0	0	0
- Rhode Island	0	0	0	0	0	0	0	0	0	0	0
- South Carolina	0	0	0	0	0	0	0	1	0	0	0
- South Dakota	0	0	1	0	0	0	0	0	0	0	0
- Tennessee	0	0	0	0	0	0	0	0	0	0	0
- Texas	0	0	0	0	0	0	0	0	0	1	0
- Utah	0	0	0	0	0	0	0	1	0	0	0
- Vermont	0	0	0	0	0	0	0	0	0	0	0
- Virginia	0	0	1	0	0	0	0	1	0	0	0
- Washington	0	0	0	0	0	0	0	0	0	0	0
- West Virginia	0	0	0	0	0	0	0	1	0	0	0
- Wisconsin	0	0	0	0	0	0	0	0	0	0	0
- Wyoming	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	0	0	0	13	0	1	0

TABLE 17
(cont.)

**MATRIX OF ACTIVITIES USED BY STATE EDUCATION AGENCIES TO DEVELOP
MATERIALS FOR MEETING STATE STANDARDS**

Key A: 1 = publishing companies develop and publish traditional materials (homeostatic decision setting); 2 = publishing companies develop and publish innovative materials (incremental decision setting); 3 = organisation develops and publishes innovative materials (incremental decision setting); 4 = organisation convenes a conference on improving the quality of materials (incremental decision setting); 5 = publishers' association and an organisation convene a committee to oversee collaboration on developing materials (incremental decision setting); 6 = organisation develops guidelines for developing materials (incremental decision setting); 7 = publishing companies develop and publish materials that incorporate computer-based technologies (neomobilistic decision setting); 8 = organisation publishes teacher-developed materials that incorporate computer-based technologies (neomobilistic decision setting); 9 = organisation commissions publishing companies to develop and publish materials (neomobilistic decision setting); 10 = organisation provides publishing companies with consultancy services for developing materials (neomobilistic decision setting); and 11 = organisation founds a research centre for improving the development of materials (neomobilistic decision setting).
Key B: n = infinite number.

10.2.2.1.3 Australia

10.2.2.1.3.1 National Level

The findings relate to objective 3 with reference to the national association of publishers, and objective 7 with reference to the development of materials. Table 18 presents a matrix indicating the organisations involved in national curriculum collaboration in the rows, and the categories of activities relating to the development of materials for meeting the national statements and profiles reported in chapters 4 and 8 in the columns. The findings indicated that whilst publishing companies undertook an infinite number of activities, other organisations conducted few activities associated with the development of materials. Publishing companies across Australia produced traditional, innovative and computer-based materials. Four activities were undertaken by organisations to improve or apply new solutions for developing materials to meet the requirements of the national statements and profiles. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. One category in each of the homeostatic, incremental and neomobilistic decision settings accounted for an infinite number of activities. Within the incremental decision setting, one other category accounted for two activities, and another category accounted for one activity. One other category in the neomobilistic decision setting accounted for one activity.

TABLE 18

**MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS AND
PUBLISHING COMPANIES TO DEVELOP MATERIALS FOR MEETING THE
NATIONAL STATEMENTS AND PROFILES**

Organisation	Category of Activities										
	1	2	3	4	5	6	7	8	9	10	11
Publishing companies	n	n	0	0	0	0	n	0	0	0	0
Curriculum Corporation:											
- Educational Guidelines for Interactive Multimedia Courseware	0	0	0	0	0	1	0	0	0	0	0
- Guidelines for Developing School Materials	0	0	0	0	0	1	0	0	0	0	0
Civics Education Group:											
- Discovering Democracy School Materials Project	0	0	1	0	0	0	0	0	0	0	0
Australian Education Systems Officials Committee:											
- Le@rning Federation	0	0	0	0	0	0	0	1	0	0	0
Total	n	n	1	0	0	2	n	1	0	0	0
Key A: 1 = publishing companies develop and publish traditional materials (homeostatic decision setting); 2 = publishing companies develop and publish innovative materials (incremental decision setting); 3 = organisation develops and publishes innovative materials (incremental decision setting); 4 = organisation convenes a conference on improving the quality of materials (incremental decision setting); 5 = publishers' association and an organisation convene a committee to oversee collaboration on developing materials (incremental decision setting); 6 = organisation develops guidelines for developing materials (incremental decision setting); 7 = publishing companies develop and publish materials that incorporate computer-based technologies (neomobilistic decision setting); 8 = organisation publishes teacher-developed materials that incorporate computer-based technologies (neomobilistic decision setting); 9 = organisation commissions publishing companies to develop and publish materials (neomobilistic decision setting); 10 = organisation provides publishing companies with consultancy services for developing materials (neomobilistic decision setting); and 11 = organisation founds a research centre for improving the development of materials (neomobilistic decision setting). Key B: n = infinite number.											

10.2.2.1.3.2 State Level

The findings relate to objective 8 with reference to the development of materials. Table 19 presents a matrix indicating the states and territories in the rows, and the categories of activities relating to the development of materials for meeting state curricula reported in Chapter 9 in the columns. The findings indicated that state education agencies have developed few materials to support state curricula. Three activities were undertaken by

state education agencies to improve or apply new solutions for developing materials to meet the requirements of state curricula. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. Whilst the homeostatic decision setting was unrepresented, the only category within the incremental decision setting accounted for one activity (33.3 percent), and the only category in the neomobilistic decision setting accounted for two activities (66.7 percent).

TABLE 19

MATRIX OF ACTIVITIES USED BY STATE AND TERRITORY EDUCATION AGENCIES TO DEVELOP MATERIALS FOR MEETING STATE CURRICULA

State or Territory	Category of Activities										
	1	2	3	4	5	6	7	8	9	10	11
- Australian Capital Territory	0	0	1	0	0	0	0	0	0	0	0
- New South Wales	0	0	0	0	0	0	0	0	0	0	0
- Northern Territory	0	0	0	0	0	0	0	0	0	0	0
- Queensland	0	0	0	0	0	0	0	0	0	0	0
- South Australia	0	0	0	0	0	0	0	1	0	0	0
- Tasmania	0	0	0	0	0	0	0	0	0	0	0
- Victoria	0	0	0	0	0	0	0	1	0	0	0
- Western Australia	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	0	2	0	0	0

Key A: 1 = publishing companies develop and publish traditional materials (homeostatic decision setting); 2 = publishing companies develop and publish innovative materials (incremental decision setting); 3 = organisation develops and publishes innovative materials (incremental decision setting); 4 = organisation convenes a conference on improving the quality of materials (incremental decision setting); 5 = publishers' association and an organisation convene a committee to oversee collaboration on developing materials (incremental decision setting); 6 = organisation develops guidelines for developing materials (incremental decision setting); 7 = publishing companies develop and publish materials that incorporate computer-based technologies (neomobilistic decision setting); 8 = organisation publishes teacher-developed materials that incorporate computer-based technologies (neomobilistic decision setting); 9 = organisation commissions publishing companies to develop and publish materials (neomobilistic decision setting); 10 = organisation provides publishing companies with consultancy services for developing materials (neomobilistic decision setting); and 11 = organisation founds a research centre for improving the development of materials (neomobilistic decision setting).

Key B: n = infinite number.

10.2.2.2 Selection

10.2.2.2.1 United Kingdom

10.2.2.2.1.1 Selecting and Adopting Authorities

The findings relate to objective 4 with reference to committees selecting materials. The findings indicated that the decision-making process for selecting materials is characterised by the use of decentralised procedures across the United Kingdom. The only restriction placed on each school's choice of materials is the imposition by unitary awarding bodies of materials recommended or approved in specifications for meeting requirements for the General Certificate of Secondary Education (GCSE) and the General Certificate of Education (GCE). Table 20 shows the countries and unitary awarding bodies in the rows, and ten key features applied during the selection process reported in Chapter 5 in the columns. Materials were selected for the secondary and post-compulsory levels by unitary awarding bodies in England, Wales and Northern Ireland. Unitary awarding bodies identified from materials in use those recommended or adopted for the secondary and post-compulsory levels in England, Wales and Northern Ireland. However, unitary awarding bodies failed to provide pre-selection displays of materials, permit publishing companies to make representations about their products, permit the public to comment on materials, or organise post-adoption publishers' caravans. For the secondary level, three unitary awarding bodies published subject lists containing multiple numbers of recommended materials although two published subject lists containing multiple numbers of adopted materials for English, and one unitary awarding body published a subject list containing a multiple number of adopted materials for English. For the post-compulsory level, three unitary awarding bodies published subject lists containing multiple numbers of recommended materials except for subject lists containing multiple numbers of adopted materials for English, and one unitary awarding body published a subject list containing a multiple number of adopted materials for English. The flexibility given to schools to adopt materials was restricted for the secondary and post-compulsory levels in England, Wales and Northern Ireland by adopted lists of literary materials for English.

TABLE 20

KEY FEATURES OF THE SELECTION PROCESS IN THE COUNTRIES

Organisation	Feature									
	1	2	3	4	5	6	7	8	9	10
<i>England and Wales</i>										
- Edexcel	BS	BS	U	-	-	-	R	A	-	E
- Oxford Cambridge and RSA Examinations	BS	BS	U	-	-	-	A	A	-	E
- Assessment and Qualifications Alliance	BS	BS	U	-	-	-	E	E	-	E
<i>Scotland</i>	-	-	-	-	-	-	-	-	-	U
<i>Northern Ireland</i>	BS	BS	U	-	-	-	A	A	-	E

Key: 1 = selection process at the secondary level for GSCE is conducted by a unitary awarding body overseeing subject-based committees (BS); 2 = selection process at the post-compulsory level for GCE is conducted by a unitary awarding body overseeing subject-based committees (BS); 3 = materials identified from materials used in schools (U); 4 = pre-selection public displays; 5 = publisher participation in hearings with selection committees; 6 = public participation in hearings with selection committees; 7 = selection committees for the secondary level publish subject lists containing a multiple number of recommended materials (R), subject lists containing a multiple number of recommended materials except for a multiple number of adopted materials for English (A), or subject lists containing a multiple number of adopted materials for English (E); 8 = selection committees for the post-compulsory level publish subject lists containing a multiple number of recommended materials except for a multiple number of adopted materials for English (A), or subject lists containing a multiple number of adopted materials for English (E); 9 = adopting authority organise a post-adoption publishers' caravan; and 10 = local adoption is unrestricted (U), or generally unrestricted, but restricted to adopted lists of materials for English (E).

10.2.2.2.1.2 Activities supporting Selection

The findings relate to objective 4 with reference to activities supporting teachers to prescribe materials. Table 21 presents a matrix indicating the countries and organisations involved in national curriculum reform in the rows, and the categories of activities applied to support teachers to prescribe materials for meeting the National Curriculum orders reported in chapters 4 and 5 in the columns. The findings indicated that education agencies and other organisations in each country, responsible for developing the National Curriculum orders, provided few resources to assist teachers select materials. Education agencies and other organisations in England and Scotland were involved in 14 activities, although no activities were undertaken in Wales and Northern Ireland. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. The single category within the homeostatic decision setting accounted for one activity (7.1 percent). One category within

the incremental decision setting accounted for two activities (14.3 percent) and another four categories each accounted for one activity (7.1 percent). One category within the neomobilistic decision setting accounted for seven activities (50.0 percent).

TABLE 21

MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS TO SELECT MATERIALS FOR MEETING NATIONAL CURRICULUM ORDERS

Organisation	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
<i>England</i>										
British Educational Suppliers Association:										
- Education Resources Awards	0	0	0	0	0	1	0	0	0	0
National Foundation for Educational Research:										
- International Review of Curriculum and Assessment	0	0	1	0	0	0	0	0	0	0
- Inventory of Citizenship Materials	0	0	0	0	1	0	0	0	0	0
Department for Education and Skills:										
- Citizenship Website	0	0	0	0	0	0	0	1	0	0
- Personal, Social and Health Website	0	0	0	0	0	0	0	1	0	0
Qualifications and Curriculum Authority:										
- Educational Resources Project	0	0	0	1	1	0	0	0	0	0
British Educational Communications and Technology Agency:										
- Multimedia Portables for Teachers	0	0	0	0	0	0	0	1	0	0

TABLE 21
(cont.)

MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS TO SELECT MATERIALS FOR MEETING NATIONAL CURRICULUM ORDERS

Organisation	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
- Curriculum Software Initiative	0	0	0	0	0	0	1	0	0	0
- Educational Software Database	0	0	0	0	0	0	0	1	0	0
Department for Education and Skills:										
- Curriculum Online	0	0	0	0	0	0	0	1	0	0
Centre for Research in Educational ICT:										
- Teachers Evaluating Educational Multimedia	0	0	0	0	0	0	0	1	0	0
<i>Scotland</i>										
Teaching and Learning Scotland:										
- resource catalogues	0	1	0	0	0	0	0	0	0	0
- 5-14 Online	0	0	0	0	0	0	0	1	0	0
Total	0	1	1	1	2	1	1	7	0	0
Key: 1 = organisation provides guidelines or criteria for selecting materials in curriculum or standards' documents (homeostatic decision setting); 2 = organisation provides a list of exemplary materials (homeostatic decision setting); 3 = organisation commissions a comparative study of selection procedures (incremental decision setting); 4 = organisation convenes a conference on selection practices (incremental decision setting); 5 = organisation commissions a committee to analyse the attributes of materials (incremental decision setting); 6 = organisation commissions a committee to select exemplary materials (incremental decision setting); 7 = organisation commissions a committee to identify information and communication technology media requirements (incremental decision setting); 8 = organisation provides an on-line searchable database of information on materials (neomobilistic decision setting); 9= organisation provides an on-line database of information on materials available on web sites (neomobilistic decision setting); and 10 = organisation provides an on-line search engine for accessing web sites containing materials (neomobilistic decision setting).										

10.2.2.2.2 United States of America

10.2.2.2.2.1 National Level

The findings relate to objective 5 with reference to activities supporting teachers to prescribe materials. Table 22 presents a matrix indicating the organisations involved in standards-based reform in the rows, and the categories of activities applied to support teachers to prescribe materials for meeting national standards reported in chapters 3 and 6 in the columns. The findings indicated that federal government agencies and national subject associations, responsible for developing the national standards' documents, provided few resources to assist teachers select materials. These organisations were involved in nine activities. Classification of the categories of activities according to decision setting indicated an even distribution in frequency of activities between decision settings. The single category within the homeostatic decision setting accounted for two activities (22.2 percent). One category within the incremental decision setting accounted for two activities (22.2 percent) and two other categories each accounted for one activity (11.1 percent). Three categories within the neomobilistic decision setting each accounted for one activity (11.1 percent).

TABLE 22

MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS TO SELECT MATERIALS FOR MEETING NATIONAL STANDARDS

Organisation	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
National Education Goals Panel: - Standards Implementation Study	0	0	1	0	0	0	0	0	0	0
National Council of Teachers of Mathematics: - National Mathematics Standards	1	0	0	0	0	0	0	0	0	0
National Academy of Sciences: - National Science Standards	1	0	0	0	0	0	0	0	0	0
National Science Foundation: - Middle School Science Study	0	0	0	0	1	0	0	0	0	0

TABLE 22
(cont.)

MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS TO SELECT MATERIALS FOR MEETING NATIONAL STANDARDS

Organisation	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
- Center for Enhancement of Science Education American Association for the Advancement of Science:										
- Project 2061 United States Department of Education:										
- Eisenhower National Clearinghouse	0	0	0	0	0	0	0	1	0	0
- Gateway to Educational Materials	0	0	0	0	0	0	0	0	1	0
- Federal Resources for Educational Excellence	0	0	0	0	0	0	0	0	0	1
Total	2	0	1	0	2	1	0	1	1	1
Key: 1 = organisation provides guidelines or criteria for selecting materials in curriculum or standards' documents (homeostatic decision setting); 2 = organisation provides a list of exemplary materials (homeostatic decision setting); 3 = organisation commissions a comparative study of selection procedures (incremental decision setting); 4 = organisation convenes a conference on selection practices (incremental decision setting); 5 = organisation commissions a committee to analyse the attributes of materials (incremental decision setting); 6 = organisation commissions a committee to select exemplary materials (incremental decision setting); 7 = organisation commissions a committee to identify information and communication technology media requirements (incremental decision setting); 8 = organisation provides an on-line searchable database of information on materials (neomobilistic decision setting); 9= organisation provides an on-line database of information on materials available on web sites (neomobilistic decision setting); and 10 = organisation provides an on-line search engine for accessing web sites containing materials (neomobilistic decision setting).										

10.2.2.2.2 State Level

State-level and local-level adoption states are best treated as separate groups in considering the pattern of transactions for selecting materials. At present, 21 states together with the Department of Defense Education Activity operate centralised adoption procedures, whilst in 29 states and the District of Columbia adoption of materials is the responsibility of local

school districts. The only major change to this pattern during the period covered by the study was the abandonment by Arizona of state-level adoption for local-level adoption in 1995, although several state-level adoption states made major modifications to their selection procedures during this period.

Analysis of the strategies relating to the selection of materials, reported in Chapter 7, indicated that a total of 126 activities were undertaken to maintain, improve or apply new solutions for selecting materials to meet state standards. If these 126 activities are grouped according to whether they were undertaken by state-level or local-level adoption states, a statistical difference is evident. The 22 state-level adoption systems undertook 86 activities (68.3 percent), whilst the 30 local-level adoption systems undertook only 40 activities (31.7 percent). Whilst each of the state-level adoption systems performed from one to nine activities, each of the local-level adoption systems performed from one to four activities, excluding eight systems, which undertook no activities.

10.2.2.2.2.1 State-Level Adoption States

10.2.2.2.2.1.1 Selecting and Adopting Authorities

The findings relate to objective 6 with reference to committees selecting materials. The key features of the procedures used to select materials in state-level adoption states are mandated in textbook adoption statutes. Table 23 shows the state-level adoption states in the rows, and ten key features applied as part of the selection procedures in these states reported in Chapter 7 under the degree of state control over materials' adoption in the columns. The state board of education selected materials in one state, oversaw subject-based committees in three states, and oversaw independent reviewers in one state. The chief state school officer oversaw subject-based committees in two states, whilst the program supervisor oversaw regional committees in one agency. Selection committees selected materials in two states, oversaw independent reviewers in five states, oversaw subject-based subcommittees in three states, oversaw subject-based subcommittees for two media categories in one state, and oversaw regional subcommittees in two states. In one state, the selection committee oversaw subject-based subcommittees, content subcommittees and a social content committee. Adopting authority was vested in the state board in 18 states, the chief state school officer in one state, a supervisory committee in one agency, and the selection committee in two states. Publishing companies submitted materials reviewed by selecting bodies in 21 systems, whilst in one state local school districts nominated materials for review. Adopting authorities provided pre-adoption displays of submitted materials for public comment in 13 states. Publishing companies were permitted to make representations about their products before adoption to selection committees in eight states, subject-based committees in six states, reviewers in one state,

and the social content committee in one state. Seven states or agencies did not permit publishers to make representations. The public was permitted to comment on submitted materials before state boards in seven states, selection committees in seven states, subject-based committees in two states, and the social content committee in one state. Ten states or agencies did not permit public comments. Adopting authorities published lists containing a prescribed number of state-adopted materials for each subject in six states. Adopting authorities published lists containing a multiple number of state-adopted materials for each subject in 13 states, a multiple number of recommended materials for each subject in two states, and multiple lists of conforming and non-conforming materials for each subject in one state. The length of adoption cycles for all subject areas operated from four years in one state, five years in four states, six years in 14 states, to seven years in one state. California and Texas, the two most populous states, operated separate adoption cycles for core subjects and other subjects. Eleven states organised publishers' caravans to familiarise local school districts with state-adopted materials. The flexibility given to local school districts to adopt non-adopted materials varied from restriction to the state-adopted list in five states, in addition to Texas, which restricted adoption for the core subjects only, to open to substitution on four grounds.

TABLE 23

KEY FEATURES OF THE SELECTION PROCESS IN STATE-LEVEL ADOPTION STATES

Organisation	Feature									
	1	2	3	4	5	6	7	8	9	10
- Alabama	CC	B	P	D	C	C, B	P	A=6	-	S
- Arkansas	BS	B	P	-	S	-	P	A=6	C	G
- California	SS	B	P	D	S, L	S, L, C, B	M	C=6, O=8	-	I
- DoDEA	OR	S	P	-	-	-	M	A=6	-	R
- Florida	OC	O	P	-	S	S	M	A=6	-	R
- Georgia	CR	B	P	D	-	-	R	A=6	-	U
- Idaho	CI	B	P	D	C	C	M	A=5	C	I
- Indiana	CI	B	P	D	C	C	P	A=6	C	I
- Kentucky	CM	C	P	-	C	-	R	A=6	C	U
- Louisiana	CI	B	P	D	C	C, B	P	A=7	C	I
- Mississippi	BS	B	P	-	S	-	P	A=5	C	U
- Nevada	SB	B	D	-	-	-	M	A=4	-	R
- New Mexico	CI	B	P	D	-	B	M	A=6	C	R
- North Carolina	CS	B	P	-	-	-	M	A=5	C	U
- Oklahoma	CI	C	P	D	C	C	P	A=6	C	N
- Oregon	BI	B	P	D	R	B	M	A=6	C	I
- South Carolina	CS	B	P	D	S	B	M	A=6	-	I
- Tennessee	CS	B	P	D	C	C	M	A=6	C	R
- Texas	OC	B	P	D	S	B	C	C=6	-	R

								O=A	-	U
- Utah	CS	B	P	-	-	-	M	A=5	-	U
- Virginia	BS	B	P	D	-	-	M	A=6	-	U
- West Virginia	CC	B	P	-	C	-	M	A=6	-	I

TABLE 23
(cont.)

KEY FEATURES OF THE SELECTION PROCESS IN STATE-LEVEL ADOPTION STATES

Key: 1 = selection process is conducted by the state board (SB), state board overseeing subject-based committees (BS), state board overseeing independent reviewers (BI), chief state school officer overseeing subject-based committees (OC), program supervisor overseeing regional committees (OR), selection committee (CC), selection committee overseeing independent reviewers (CI), selection committee overseeing subject-based subcommittees (CS), selection committee overseeing subject-based subcommittees for two media categories (CM), selection committee overseeing regional subcommittees (CR), or selection committee overseeing a subject-based subcommittee, a content subcommittee and a social content committee (SS); 2 = adopting authority is vested in the state board (B), chief state school officer (O), supervisory committee (S), or selection committee (C); 3 = materials are submitted by publishing companies (P), or recommended by local school districts (D); 4 = adopting authority organises pre-adoption public displays (D); 5 = publishers participate in hearings with the selection committee (C), subject-based committees (S), reviewers (R), or social content committee (L); 6 = public participates in hearings with the state board (B), selection committee (C), subject-based committees (S), or social content committee (L); 7 = adopting authority publishes a list containing a prescribed number of state-adopted materials (P), a multiple number of state-adopted materials (M), a multiple number of recommended materials (R), or separate state-adopted lists containing multiple numbers of conforming and non-conforming materials (C); 8 = adoption cycles for all subjects (A) are prescribed for a period of years (N = ...), core subjects (C) are prescribed for a period of years (N = ...) and other subjects (O) are prescribed for a period of years (N = ...) or for a period of years determined by the adopting authority (A); 9 = adopting authority organises a post-adoption publishers' caravans (C); and 10 = local adoption is restricted to the state-adopted list (R), open to substitution by specific school districts through petition (S), open to substitution by a group of school districts through petition, and by individual school districts through petition in the case of new and innovative materials (G), open to substitution by individual school districts through petition in the case of new and innovative materials (N), open to substitution by individual school districts through petition (I), or unrestricted (U).

Petitioning by specific school districts was permitted in one state. Petitioning by a group of school districts, or by individual school districts in the case of new and innovative materials, was permitted in one state. Petitioning by individual school districts in the case of new and innovative materials was permitted in one state. Petitioning by individual school districts was permitted in seven states. Six states permitted unrestricted adoption of non-adopted materials, in addition to Texas, which permitted unrestricted adoption for the enrichment subjects only.

10.2.2.2.2.1.2 Activities supporting Selection

The findings relate to objective 6 with reference to activities supporting teachers to prescribe materials. Table 24 presents a matrix indicating the state-level adoption states in the rows and the categories of activities applied to support teachers to prescribe materials for meeting state standards in the columns. The findings indicated that state education agencies and other organisations provided an extensive number of resources to assist

teachers select materials. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. Representation of activities across all categories in the homeostatic decision setting was moderate with 28 cases (32.6 percent). Sequencing of curriculum review and materials' adoption cycles and the use of lists of exemplary materials accounted for most cases. Representation of activities across all categories in the incremental decision setting was moderate with 21 cases (24.4 percent). State-level adoption states frequently required publishing companies to correlate submitted materials to state standards, and selection committees to select materials that were aligned with state standards. Representation of activities across all categories in the neomobilistic decision setting was high with 37 cases (43.0 percent). State-level adoption states frequently provided on-line ordering systems for state-adopted materials or searchable databases providing information on state-adopted materials.

TABLE 24

MATRIX OF ACTIVITIES USED BY STATE-LEVEL ADOPTION STATES TO SELECT MATERIALS FOR MEETING STATE STANDARDS

State	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
- Alabama	0	0	1	0	0	0	0	0	0	0
- Arkansas	0	1	1	0	0	0	0	0	0	0
- California	1	1	1	1	1	0	3	1	1	1
- DoDEA	0	0	1	0	1	0	0	0	0	0
- Florida	1	0	0	1	1	1	1	0	0	1
- Georgia	0	1	1	1	0	0	1	0	0	0
- Idaho	0	0	0	0	1	0	1	0	0	0
- Indiana	1	1	0	1	0	0	0	0	0	0
- Kentucky	0	1	1	0	0	0	0	0	0	2
- Louisiana	0	0	0	1	1	1	1	0	0	1
- Mississippi	0	1	1	1	0	1	1	0	0	1
- Nevada	0	1	0	0	1	0	0	0	0	0
- New Mexico	0	0	1	1	0	2	1	0	0	0
- North Carolina	0	0	1	0	1	0	1	0	0	0
- Oklahoma	0	0	0	0	0	1	0	0	0	0
- Oregon	0	0	0	1	0	1	1*	0	0	0
- South Carolina	1	1	0	0	1	1	1	0	0	0
- Tennessee	0	0	1	0	1	1	0	0	0	0
- Texas	1	1	1	0	1	2	1	0	0	1
- Utah	0	0	1	0	1	0	2*	0	0	0
- Virginia	0	1	0	1	1	0	0	0	0	2
- West Virginia	0	0	1	0	0	0	0	0	0	0
Total	5	10	13	9	12	11	15*	1	1	9

TABLE 24
(cont.)

MATRIX OF ACTIVITIES USED BY STATE-LEVEL ADOPTION STATES TO SELECT MATERIALS FOR MEETING STATE STANDARDS

Key A: 1 = education agency provides guidelines or criteria for selecting materials in standards or curriculum documents (homeostatic decision setting); 2 = education agency provides a list of exemplary materials (homeostatic decision setting); 3 = education agency sequences curriculum review and materials' adoption cycles (homeostatic decision setting); 4 = education agency requires publishing companies to correlate materials with state standards (incremental decision setting); 5 = education agency requires state standards and materials to be aligned (incremental decision setting); 6 = education agency, depository or organisation provides an on-line ordering system for materials (neomobilistic decision setting); 7 = education agency, depository or organisation provides an on-line searchable database of information on materials (neomobilistic decision setting); 8 = education agency, depository or organisation provides an on-line searchable database of correlated materials and standards (neomobilistic decision setting); 9 = organisation provides research and consultancy services for selecting materials (neomobilistic decision setting); and 10 = legislature or state authority enacts a statutory change in an adoption procedure (neomobilistic decision setting).

Key B: * = Depositories in Oregon and Utah share an on-line searchable database.

10.2.2.2.2.2 Local-Level Adoption States

The findings relate to objective 6 with reference to activities supporting teachers to prescribe materials. Table 25 presents a matrix indicating the local-level adoption states in the rows and the categories of activities applied to support teachers to prescribe materials for meeting state standards in the columns. The findings indicated that few resources to assist teachers select materials were provided by state education agencies and other organisations. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. Representation of activities across all categories in the homeostatic decision setting was high with 23 cases (57.5 percent). The specification of selection criteria and the use of lists of exemplary materials were the most frequently occurring activities. Representation of activities within one category in the incremental decision setting was low with eight cases (20.0 percent). Representation of activities within four categories in the neomobilistic decision setting was low with nine cases (22.5 percent). The provision of on-line ordering systems accounted for half the cases.

TABLE 25

MATRIX OF ACTIVITIES USED BY LOCAL-LEVEL ADOPTION STATES TO SELECT MATERIALS FOR MEETING STATE STANDARDS

State	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
- Alaska	0	1	0	0	0	0	0	0	0	0
- Arizona	0	0	0	0	0	0	0	0	0	1
- Colorado	0	0	0	0	0	0	0	0	0	0
- Connecticut	0	0	0	0	1	0	0	0	1	0
- Delaware	1	1	0	0	0	0	0	0	0	0
- District of Columbia	0	0	0	0	0	0	0	0	0	0
- Hawaii	0	1	0	0	1	0	1	0	0	0
- Illinois	0	0	0	0	1	0	1	0	0	0
- Iowa	0	0	0	0	0	0	0	0	0	0
- Kansas	0	1	0	0	0	0	0	0	0	0
- Maine	0	0	0	0	1	0	0	0	0	0
- Maryland	0	0	0	0	0	0	0	0	0	0
- Massachusetts	1	1	0	0	0	0	0	0	0	0
- Michigan	0	1	0	0	1	0	0	1	0	0
- Minnesota	1	1	0	0	0	0	1	0	0	0
- Missouri	0	0	0	0	0	0	0	0	0	0
- Montana	0	0	1	0	0	0	0	0	0	0
- Nebraska	0	0	0	0	1	0	0	0	0	0
- N. Hampshire	0	1	0	0	0	0	0	0	0	0
- New Jersey	1	1	0	0	0	0	0	0	0	0
- New York	1	1	0	0	0	0	1	0	1	0
- North Dakota	0	0	0	0	0	0	0	0	0	0
- Ohio	1	1	0	0	0	0	0	0	0	0
- Pennsylvania	1	0	0	0	1	0	0	0	0	0
- Rhode Island	1	1	0	0	0	0	1	0	0	0
- South Dakota	0	0	0	0	1	0	0	0	0	0
- Vermont	0	0	0	0	0	0	0	0	0	0
- Washington	0	1	0	0	0	0	0	0	0	0
- Wisconsin	1	0	0	0	0	0	0	0	0	0
- Wyoming	0	0	0	0	0	0	0	0	0	0
Total	9	13	1	0	8	0	5	1	2	1

Key A: 1 = education agency provides guidelines or criteria for selecting materials in standards or curriculum documents (homeostatic decision setting); 2 = education agency provides a list of exemplary materials (homeostatic decision setting); 3 = education agency sequences curriculum review and materials' adoption cycles (homeostatic decision setting); 4 = education agency requires publishing companies to correlate materials with state standards (incremental decision setting); 5 = education agency requires state standards and materials to be aligned (incremental decision setting); 6 = education agency, depository or organisation provides an on-line ordering system for materials (neomobilistic decision setting); 7 = education agency, depository or organisation provides an on-line searchable database of information on materials (neomobilistic decision setting); 8 = education agency, depository or organisation provides an on-line searchable database of correlated materials and standards (neomobilistic decision setting); 9 = organisation provides research and consultancy services for selecting materials (neomobilistic decision setting); and 10 = legislature or state authority enacts a statutory change in an adoption procedure (neomobilistic decision setting).

10.2.2.2.3 Australia

10.2.2.2.3.1 National Level

The findings relate to objective 7 with reference to activities supporting teachers to prescribe materials. Table 26 presents a matrix indicating the organisations involved in national curriculum reform in the rows, and the categories of activities applied to support teachers to prescribe materials for meeting the national statements and profiles reported in Chapter 8 in the columns. The findings indicated that organisations, responsible for developing the national statements and profiles, provided few resources to assist teachers select materials. These organisations were involved in two activities. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. Two categories within the incremental decision setting each accounted for one activity (50.0 percent). The homeostatic and neomobilistic decision settings were unrepresented.

TABLE 26

MATRIX OF ACTIVITIES USED BY NATIONAL ORGANISATIONS TO SELECT MATERIALS FOR MEETING THE NATIONAL STATEMENTS AND PROFILES

Organisation	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
Australian Publishers Association: - Awards for Excellence in Educational Publishing	0	0	0	0	0	1	0	0	0	0
Corporation: - marketing research study	0	0	1	0	0	0	0	0	0	0
Total	0	0	1	0	0	1	0	0	0	0
Key: 1 = organisation provides guidelines or criteria for selecting materials in curriculum or standards' documents (homeostatic decision setting); 2 = organisation provides a list of exemplary materials (homeostatic decision setting); 3 = organisation commissions a comparative study of selection procedures (incremental decision setting); 4 = organisation convenes a conference on selection practices (incremental decision setting); 5 = organisation commissions a committee to analyse the attributes of materials (incremental decision setting); 6 = organisation commissions a committee to select exemplary materials (incremental decision setting); 7 = organisation commissions a committee to identify information and communication technology media requirements (incremental decision setting); 8 = organisation provides an on-line searchable database of information on materials (neomobilistic decision setting); 9= organisation provides an on-line database of information on materials available on web sites (neomobilistic decision setting); and 10 = organisation provides an on-line search engine for accessing web sites containing materials (neomobilistic decision setting).										

10.2.2.2.3.2 State Level

10.2.2.2.3.2.1 Selecting and Adopting Authorities

The findings relate to objective 8 with reference to committees selecting materials. The findings indicated that the decision-making process for selecting materials in the Australian states and territories is characterised by the use of decentralised procedures. The only restriction placed on individual school's choice of materials is the imposition by accreditation agencies of materials recommended or approved in syllabuses for the post-compulsory level. Table 27 shows the states and territories in the rows, and ten key features applied as part of the selection procedures reported in Chapter 9 under the degree of state control over materials' adoption in the columns. Materials were selected for kindergarten to grade 10 by state education agencies overseeing independent reviewers in three states, whilst centralised procedures were not applied in the remaining five states and territories. Materials were selected for grades 11 and 12 by accreditation boards overseeing subject-based committees in seven states and territories, whilst the accreditation board oversaw subject-based subcommittees and a social content committee for literary materials for English in one state. Publishing companies submitted materials reviewed by reviewers for kindergarten to grade 10 in three states. However, curriculum committees identified from materials in use those recommended or adopted for grades 11 and 12 in seven states and territories, whilst curriculum committees approved materials recommended for grades 11 and 12 by school boards in one territory. Adopting authorities failed to provide pre-selection displays of submitted materials, permit publishing companies to make representations about their products before selection, and permit the public to comment on submitted materials. Adopting authorities for kindergarten to grade 10 published lists containing a multiple number of recommended materials in three states. Adopting authorities for grades 11 and 12 published subject lists containing a multiple number of recommended materials in three states and territories, and subject lists containing a multiple number of recommended materials except for a multiple number of state-adopted materials for English in four states. Only one state familiarised schools with selected materials through an exposition. The flexibility given to schools to adopt materials was unrestricted for kindergarten to grade 10 in all states and territories, but restricted in grades 11 to 12 in four states by state-adopted lists of English materials.

TABLE 27

KEY FEATURES OF THE SELECTION PROCESS IN THE STATES

State or Territory	Feature									
	1	2	3	4	5	6	7	8	9	10
- Australian Capital Territory	-	BS	C	-	-	-	-	-	-	U
- New South Wales	DI	SS	P, U	-	-	-	R	A	-	E
- Northern Territory	-	BS	U	-	-	-	-	R	-	U
- Queensland	DI	BS	P, U	-	-	-	R	R	-	U
- South Australia	-	BS	U	-	-	-	-	A	-	E
- Tasmania	-	BS	U	-	-	-	-	A	-	E
- Victoria	-	BS	U	-	-	-	-	A	-	E
- Western Australia	DI	BS	P, U	-	-	-	R	R	E	U

Key: 1 = selection process for kindergarten to grade 10 is conducted by the education agency overseeing independent reviewers (DI); 2 = selection process for grades 11 and 12 is conducted by the accreditation board overseeing subject-based committees (BS), or an accreditation board overseeing subject-based committees and a social content committee for literary materials for English (SS); 3 = materials are submitted by publishing companies for kindergarten to grade 10 (P), identified from materials used in schools for grades 11 and 12 (U), or recommended by school boards for grades 11 and 12 (C); 4 = pre-selection public displays; 5 = publisher participation in hearings with selection committees; 6 = public participation in hearings with selection committees; 7 = selection committees for kindergarten to grade 10 publish lists containing a multiple number of recommended materials (R); 8 = selection committees for grades 11 and 12 publish subject lists containing a multiple number of recommended materials (R), or subject lists containing a multiple number of recommended materials except for a multiple number of state-adopted materials for English (A); 9 = adopting authority organises a post-adoption exposition (E); and 10 = local adoption is unrestricted (U), or generally unrestricted, but restricted to state-adopted lists of materials for English in grades 11 and 12 (E).

10.2.2.2.3.2 Activities supporting Selection

The findings relate to objective 8 with reference to activities supporting teachers to prescribe materials. Table 28 presents a matrix indicating the states and territories in the rows, and the categories of activities applied to support teachers to prescribe materials for meeting state curricula reported in Chapter 9 in the columns. The findings indicated that few resources to assist teachers select materials were provided by state education agencies and accreditation agencies. Analysis of strategies relating to the selection of materials indicated that a total of ten activities were undertaken by state education agencies or accreditation agencies to maintain or apply new solutions for selecting materials to meet state curricula. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. Representation of activities within two categories in the homeostatic decision setting was high with seven cases (70.0 percent). The use of lists of exemplary materials accounted for

most cases. The incremental decision setting was unrepresented by any activities. Representation of activities within one category in the neomobilistic decision setting was low with only three cases (30.0 percent). The provision of on-line searchable databases of information on materials accounted for all cases.

TABLE 28

MATRIX OF ACTIVITIES USED BY STATE AND TERRITORY EDUCATION AGENCIES TO SELECT MATERIALS FOR MEETING STATE CURRICULA

State or Territory	Category of Activities									
	1	2	3	4	5	6	7	8	9	10
- Australian Capital Territory	0	0	0	0	0	0	0	0	0	0
- New South Wales	1	1	0	0	0	0	1	0	0	0
- Northern Territory	0	0	0	0	0	0	0	0	0	0
- Queensland	0	1	0	0	0	0	1	0	0	0
- South Australia	1	1	0	0	0	0	0	0	0	0
- Tasmania	0	1	0	0	0	0	0	0	0	0
- Victoria	0	1	0	0	0	0	0	0	0	0
- Western Australia	0	0	0	0	0	0	1	0	0	0
Total	2	5	0	0	0	0	3	0	0	0

Key A: 1 = education agency provides guidelines or criteria for selecting materials in standards or curriculum documents (homeostatic decision setting); 2 = education agency provides a list of exemplary materials (homeostatic decision setting); 3 = education agency sequences curriculum review and materials' adoption cycles (homeostatic decision setting); 4 = education agency requires publishing companies to correlate materials with state standards (incremental decision setting); 5 = education agency requires state standards and materials to be aligned (incremental decision setting); 6 = education agency, depository or organisation provides an on-line ordering system for materials (neomobilistic decision setting); 7 = education agency, depository or organisation provides an on-line searchable database of information on materials (neomobilistic decision setting); 8 = education agency, depository or organisation provides an on-line searchable database of correlated materials and standards (neomobilistic decision setting); 9 = organisation provides research and consultancy services for selecting materials (neomobilistic decision setting); and 10 = legislature or state authority enacts a statutory change in an adoption procedure (neomobilistic decision setting).

10.2.2.3 Use

10.2.2.3.1 United Kingdom

The findings relate to objective 3 with reference to the national association of publishers, and objective 4 with reference to the use of materials. Table 29 presents a matrix indicating the organisations involved in national curriculum reform in the rows, and the categories of activities relating to the use of materials for meeting the National Curriculum orders

reported in chapters 4 and 5 in the columns. The findings indicated that publishing companies piloted materials in schools, national curriculum agencies recommended using materials in curriculum documents, and the publishers' association and other organisations surveyed the use of materials in schools. Governmental agencies and other organisations in England, Wales, Scotland and Northern Ireland undertook 12 activities to maintain, improve or apply new solutions for using materials to meet the requirements of the National Curriculum orders. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. One category in the homeostatic decision setting accounted for four activities. One category in the incremental decision setting accounted for an infinite number of activities. One other category in the incremental decision setting accounted for four activities, another category accounted for three activities, and a further category accounted for one activity. The neomobilistic decision setting was unrepresented by any activities.

TABLE 29

MATRIX OF STRATEGIES APPLIED BY NATIONAL ORGANISATIONS FOR USING MATERIALS TO MEET NATIONAL CURRICULUM ORDERS

Organisation	Category of Activities						
	1	2	3	4	5	6	7
<i>United Kingdom</i>							
Publishing companies	0	n	0	0	0	0	0
<i>England</i>							
Publishers Association:							
- School Book Alliance	0	0	0	1	0	0	0
- Keele University	0	0	0	1	0	0	0
Department for Education and Skills and Qualifications and Curriculum Authority:							
1999 National Curriculum							
- all subjects	1	0	0	0	0	0	0
Qualifications and Curriculum Authority:							
Educational Resources Project							
- art, English, music, physical education	0	0	0	1	0	0	0
Department for Education and Skills:							
- Curriculum Online	0	0	0	1	0	0	0
Office for Standards in Education							
- chief inspector's reports	0	0	0	0	1	0	0
<i>Wales</i>							
Qualifications, Curriculum and Assessment Authority for Wales:							

1999 National Curriculum							
- all subjects	1	0	0	0	0	0	0

TABLE 29
(cont.)

MATRIX OF STRATEGIES APPLIED BY NATIONAL ORGANISATIONS FOR USING MATERIALS TO MEET NATIONAL CURRICULUM ORDERS

Organisation	Category of Activities						
	1	2	3	4	5	6	7
<i>Scotland</i>							
Scottish Executive							
Education Department:							
National Guidelines							
- all curriculum areas	1	0	0	0	0	0	0
Scottish Consultative Council							
on the Curriculum							
- secondary materials	0	0	1	0	0	0	0
Her Majesty's Inspectorate							
of Education							
- chief inspector's reports	0	0	0	0	1	0	0
<i>Northern Ireland</i>							
Department of Education							
for Northern Ireland:							
1996 Northern Ireland Curriculum							
- all areas of study	1	0	0	0	0	0	0
Northern Ireland Education							
and Training Inspectorate							
- chief inspector's reports	0	0	0	0	1	0	0
Total	4	n	1	4	3	0	0
Key A: 1 = organisation recommends using materials in particular media in curriculum or standards' documents (homeostatic decision setting); 2 = education agency or publishing companies pilot materials in schools during the developmental phase (incremental decision setting); 3 = education agency, publishing companies or organisation conduct market research on the adoption of materials (incremental decision setting); 4 = education agency, publishers' association or organisation surveys the use of materials in schools (incremental decision setting); 5 = education agency, publishers' association or organisation collates and reports data from various sources on the use of materials in local, state or national systems (incremental decision setting); 6 = organisation provides dissemination centres to facilitate adoption and implementation of materials (neomobilistic decision setting); and 7 = organisation facilitates strategies for installing, monitoring or modifying materials in schools (neomobilistic decision setting). Key B: n = infinite number.							

10.2.2.3.2 United States

The findings relate to objective 3 with reference to the national association of publishers, and objectives 5 and 6 with reference to the use of materials. Table 30 presents a matrix indicating the organisations involved in standards-based reform in the rows, and the categories of activities relating to the use of materials for meeting the national standards reported in chapters 4, 6 and 7 in the columns. The findings indicated that publishing companies piloted materials in schools, subject associations recommended using materials in standards' documents, the publishers' association surveyed the use of materials in

schools, and other organisations facilitated adoption and implementation of materials. Governmental agencies and other organisations undertook seven activities to maintain, improve or apply new solutions for using materials to meet the requirements of the national standards. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. One category in the homeostatic decision setting accounted for one activity. One category in the incremental decision setting accounted for an infinite number of activities. Another category in the incremental decision setting accounted for two activities, and a further category accounted for one activity. One category in the neomobilistic decision setting accounted for two activities, and another category accounted for one activity.

TABLE 30

MATRIX OF STRATEGIES APPLIED BY NATIONAL ORGANISATIONS FOR USING MATERIALS TO MEET THE NATIONAL STANDARDS

Organisation	Category of Activities						
	1	2	3	4	5	6	7
Publishing companies	0	n	0	0	0	0	0
Association of American Publishers:							
- Penn, Schoen and Berland	0	0	0	1	0	0	0
- Mathew Greenwald and Associates	0	0	0	1	0	0	0
National Standards:							
- science, history, geography, English language arts, foreign languages, social studies	1	0	0	0	0	0	0
National Science Foundation:							
- Instructional Materials Development Program	0	0	0	0	0	1	0
Eisenhower Regional Consortia for Mathematics and Science	0	0	0	0	0	1	0
Connie Muther & Associates	0	0	0	0	0	0	1
American Textbook Council	0	0	1	0	0	0	0
Total	1	n	1	2	0	2	1
Key A: 1 = organisation recommends using materials in particular media in curriculum or standards' documents (homeostatic decision setting); 2 = education agency or publishing companies pilot materials in schools during the developmental phase (incremental decision setting); 3 = education agency, publishing companies or organisation conduct market research on the adoption of materials (incremental decision setting); 4 = education agency, publishers' association or organisation surveys the use of materials in schools (incremental decision setting); 5 = education agency, publishers' association or organisation collates and reports data from various sources on the use of materials in local, state or national systems (incremental decision setting); 6 = organisation provides dissemination centres to facilitate adoption and implementation of materials (neomobilistic decision setting); and 7 = organisation facilitates strategies for installing, monitoring or modifying materials in schools (neomobilistic decision setting).							

10.2.2.3.3 Australia

The findings relate to objective 3 with reference to the national association of publishers, and objectives 7 and 8 with reference to the use of materials. Table 31 presents a matrix indicating the organisations involved in national curriculum reform in the rows, and the categories of activities relating to the use of materials for meeting the national statements and profiles reported in chapters 4, 8 and 9 in the columns. The findings indicated that publishing companies piloted materials in schools, national curriculum agencies recommended using materials in curriculum documents, and the publishers' association surveyed the use of materials in schools. Governmental agencies and other organisations undertook five activities to maintain, improve or apply new solutions for using materials to meet the requirements of the national statements and profiles. Classification of the categories of activities according to decision setting indicated an uneven distribution in frequency of activities between decision settings. One category in the homeostatic decision setting accounted for one activity. One category in the incremental decision setting accounted for an infinite number of activities. Another category in the incremental decision setting accounted for three activities. One category in the neomobilistic decision setting accounted for one activity.

TABLE 31

MATRIX OF STRATEGIES APPLIED BY NATIONAL ORGANISATIONS FOR USING MATERIALS TO MEET THE NATIONAL STATEMENTS

Organisation	Category of Activities						
	1	2	3	4	5	6	7
Publishing companies	0	n	0	0	0	0	0
Australian Publishers Association:							
- Teaching Resources and Textbook Research Unit, University of Sydney	0	0	0	1	0	0	0
Curriculum Corporation: 1994 National Statements and Profiles							
- all learning areas	1	0	0	0	0	0	0
Civics Education Group:							
- Discovering Democracy School Materials Project	0	1	0	1	0	0	1
Curriculum Corporation and Education.au:							
- Le@rning Federation	0	1	0	1	0	0	0
Total	1	n	0	3	0	0	1

TABLE 31
(cont.)

MATRIX OF STRATEGIES APPLIED BY NATIONAL ORGANISATIONS FOR USING MATERIALS TO MEET THE NATIONAL STATEMENTS

Key A: 1 = organisation recommends using materials in particular media in curriculum or standards' documents (homeostatic decision setting); 2 = education agency or publishing companies pilot materials in schools during the developmental phase (incremental decision setting); 3 = education agency, publishing companies or organisation conduct market research on the adoption of materials (incremental decision setting); 4 = education agency, publishers' association or organisation surveys the use of materials in schools (incremental decision setting); 5 = education agency, publishers' association or organisation collates and reports data from various sources on the use of materials in local, state or national systems (incremental decision setting); 6 = organisation provides dissemination centres to facilitate adoption and implementation of materials (neomobilistic decision setting); and 7 = organisation facilitates strategies for installing, monitoring or modifying materials in schools (neomobilistic decision setting).

Key B: n = infinite number.

10.3 Discussion

10.3.1 Interpretation

10.3.1.1 Development of Materials

The findings of the study presented in tables 15 to 19 offer an impression rather than an actual depiction of the complex interactions occurring in the marketplace as publishing companies, education agencies and subject associations compete to develop and market their products. These interactions involve a diverse range of publishing and support activities relating to the development of materials.

The study showed that publishing activities constitute the main work of publishing companies, but form only a subsidiary enterprise for education agencies and other organisations involved in education. The activities of publishing companies were identified from the review of research literature reported in Chapter 2, and the survey of publishers reported in Chapter 4. The evidence from research literature suggested that the publishing process has become institutionalised over a long period of time by integrating new technological advances, and diversifying into new media. The results of the survey identified that most of the sampled publishing companies aligned their products to nationally agreed curricula or standards. However, the respondents stated that the size of the market in which particular curriculum or standards' documents were used was the most important factor affecting publishers' decisions about the amount of attention given to particular documents. The evidence from the content analyses of products submitted by publishers indicated that large publishing companies, in particular, were more able to apply new technologies and diversify into new media. Therefore, those companies that

applied new technologies to develop materials, which addressed national curricula and standards more effectively through new media, were likely to increase the marketability and profitability of their products, since such materials were more likely to be acceptable to selection committees and teachers. This finding suggests that a differential effect may exist between the size of publishing companies and the feasibility to develop materials at a reasonable cost.

On the other hand, education agencies and subject associations played only a minor role in developing materials to support nationally agreed curricula and standards. However, the study indicated that education agencies, particularly in the United States, are playing an increasingly important role in applying information and communication technology to publish and exchange teacher-developed materials as a means of supporting the implementation of standards and curricula.

However, publishing companies, education agencies, and other organisations involved in education rarely carried out support activities for developing materials. Developing guidelines for developing materials and convening conferences on improving the quality of materials constituted support activities in the incremental decision setting. Organisations providing publishing companies with consultancy services for developing materials and research centres for improving the development of materials constituted support activities in the neomobilistic decision setting.

The evidence suggested that each of the three countries is meeting the challenge of producing new materials that satisfy the needs of students in attaining nationally agreed curricula and standards at different rates. The Publishers Association played a dynamic role in identifying reasons for shortages of materials by commissioning large-scale research studies to examine the provision of textbooks and other materials in British schools. The inadequate funding for purchasing materials identified from these studies focused educators' attention on this issue, and forged an alliance between publishers and educators to tackle this problem. Between 1996 and 1999, the Qualifications and Curriculum Authority led this consortium in identifying the attributes of available materials and providing a mechanism for monitoring their quality. Although members of this consortium recognised that readjustment was necessary to improve the quality of new materials, the lack of a strong tradition of research and understanding about the complex interaction of variables in the materials' marketplace in the United Kingdom militated against success in providing a solution. However, the feasibility for publishing companies to produce new materials at reasonable costs, market them effectively, make acceptable profits, and meet the criteria prescribed by selection committees and teachers have most likely increased.

The lack of a strong tradition of research and understanding about the materials' marketplace is not a serious limitation in the United States. The commentary presented in chapters 2 and 3 suggested that policy-makers, publishers and educators have gained clear understandings about key issues affecting the development of materials. The way that takeovers and mergers are changing the nature of the publishing industry was well recognised. The influence that strategies publishing companies employ to coordinate the development of new products to the adoption cycles of large state-level adoption states have on the content of materials marketed across the United States was widely appreciated. The differing demands that teachers and academics project for content in materials was well understood. In spite of a determined attempt made by national and state policy-makers in the mid 1980s to modify these practices, this effort faltered in the 1990s through the sporadic actions of policy-makers and resistance from the publishing industry, adopting authorities, teachers and academics. The outcome of failing to modify this system in the past, however, has been reduced in aspects relating to the development of materials by the impact of national and state standards. The greater uniformity brought about by standards-based reform on a large educational system comprising of many components has most likely increased the feasibility for publishing companies to produce new materials at reasonable costs, market them effectively, make acceptable profits, and meet the criteria prescribed by selection committees and teachers.

It is apparent that the poor understanding that most policy-makers and educators in Australia have about the variables controlling the materials' marketplace has not been corrected by a need to deal with a crisis relating to the availability of materials in schools. Those curriculum projects that have been undertaken by education agencies have focused on developing materials for specific applications without translating the expertise gained from such work to more general contexts, in which materials are produced with a view to improving their quality. This situation has muted the impact of the national statements and state curricula on the development of new materials. However, the feasibility for publishing companies to produce new materials at reasonable costs, market them effectively, make acceptable profits, and meet the criteria prescribed by selection committees and teachers have most likely increased.

10.3.1.2 Selection of Materials

The findings of the study presented in tables 20 to 28 outline a diverse range of functions and activities relating to the selection of materials, indicating the importance of this aspect in the materials' marketplaces of the three countries. The functions associated with the selection of materials relate to the roles of selection bodies and adopting authorities. The

activities associated with the selection of materials consist of a range of resources intended to assist educators to select appropriate materials.

The study showed that functions associated with the selection of materials are only carried out by state and local education agencies, but that activities associated with the selection of materials are undertaken by federal or national governmental agencies and subject associations as well as state education agencies. The functions associated with the selection of materials were identified from the review of research literature reported in Chapter 2 and the degree of state or local control over materials' adoption reported in chapters 7 and 9. Activities associated with the selection of materials were identified from strategies reported in chapters 5 to 9.

The functions of selecting materials have been carried out historically at the state, local or school levels in each of the three countries. However, the degree of centralisation of these functions at the state level or decentralisation to the local level plays an important part in determining the roles of participants. It is evident from the study that centralisation of the selection process increases the concentration of expertise among bureaucrats and members of selection committees involved in the decision-making process, whilst decentralisation of the selection process increases teachers' involvement in the decision-making process but not their expertise in selecting materials.

Authority for selecting materials in the countries of the United Kingdom has been decentralised to individual schools to a greater extent than in either the United States or Australia. Table 20 showed that the only centralising influence on the selection of materials is provided by unitary awarding bodies, which approve or recommend materials used in secondary schools across England, Wales and Northern Ireland. Therefore, the highly decentralised nature of these selection procedures is responsible for a low degree of expertise among teachers, curriculum coordinators and administrators about issues relating to the selection of materials.

Research literature published on selection procedures used in the states of the United States has concentrated debate on the controversy between advocates of state-level and local-level adoption, focusing the discussion in a framework of arguments presenting the advantages and disadvantages of each type. The analysis of the key features of selection procedures used in the 21 state-level adoption states presented in Table 23 confirmed that these features arose from a common ancestral line, although the variety between the features in different states is now extensive. The analysis of the findings of research literature has shown that whilst the legislation of state-level adoption states is characterised by

regulations governing each feature of the selection process, such regulations are largely absent from the legislation of local-level adoption states. The regulations of state-level adoption states govern the role of the adopting authority, the composition of selection committees, the prescription of adoption cycles, the definition of selection criteria, the role of public participation, and the imposition of requirements and restrictions on publishing companies.

Authority for selecting materials in the Australian states and territories has been divided by the dual system providing separate curricular provisions for the compulsory and post-compulsory levels. Analysis of the key features of selection procedures in the states and territories presented in Table 27 indicated that different procedures were used to select materials at each level. Although differences between the two levels in curricular provisions are being ameliorated by state-level curriculum reforms, this change has not yet modified the divergent ways materials are selected.

The evidence from research literature suggested that marked differences occurred in the levels of decision-making between selection procedures undertaken centrally or locally. The findings of the study confirmed that a strong correlation existed between the degree to which selection procedures are centralised or decentralised at the state or local levels in the United States and the number of activities associated with the selection of materials undertaken by state education agencies. Furthermore, this correlation extended to a high degree of centralisation and a high incidence of activities across the three decision settings, whilst a high degree of decentralisation is associated with low incidence of activities across the three decision settings. However, it is impossible to generalise this finding across the three countries, because the number of cases referring to the United Kingdom and Australia is too small to draw any firm conclusion. The lack of reciprocity between the ways education agencies in the three countries select materials suggests important differences exist, because selection procedures in the United Kingdom and Australia are less coherent in their organisation. The study indicated that federal or national governmental agencies and subject associations are becoming increasingly involved in providing resources for educators to select appropriate materials, particularly in the United Kingdom and the United States, although the selection of materials is not a function of this level.

The evidence suggested that each of the three countries is meeting the challenge of providing activities to assist teachers to select materials that satisfy the needs of students in attaining nationally agreed curricula and standards at different rates. The study showed that inadequate funding for purchasing materials to support implementation of the National Curriculum in schools in England raised educators' perceptions about selecting

materials of high quality. In 1996, the Qualifications and Curriculum Authority commissioned the National Foundation for Educational Research to conduct the International Review of Curriculum and Assessment Frameworks, in part, to identify procedures used in other countries to select and adopt materials. In 1996 and 1998, the Qualifications and Curriculum Authority convened conferences of stakeholders to consider alternative selection procedures that could be introduced. Whilst the outcome of these initiatives failed to change policy-makers' attitudes about the appropriateness of the prevailing pattern of decentralised decision-making used to select materials, it reinforced the collaborative approach arising between publishers and the educational community to implement procedures to improve the selection of materials. However, it is apparent that this strategy focused on the criterion of cost more than the content, acceptability and useability of materials. This outcome is not surprising, since the extensive collection of data on the provision of materials in schools focused on increasing the funds for their purchase. On the other hand, decision-making in the selection of materials was not improved in terms of selecting materials on the basis of their content, acceptability and useability. The debate about defining an organised and sound decision-making process for selecting materials has only begun in the United Kingdom, and this discussion is largely confined to England.

A conclusion drawn from research literature published on selection procedures used in the states of the United States suggests that state-level adoption has led to a greater concentration of expertise in participants involved in the decision-making process. This conclusion supports the finding of this study that a significantly greater number of activities, intended to improve the selection of materials, have occurred in state-level than in local-level adoption states. Furthermore, the proportion of activities occurring within the neomobilistic decision setting was significantly higher in state-level adoption states, whilst activities in the homeostatic decision setting predominated in local-level adoption states. There was little difference in the proportions between the two types for activities in the incremental decision setting. Whilst the level of response between state-level and local-level adoption states to the impact of standards-based reform was substantially different with regard to the selection of materials, this difference was not so readily related to the criteria of content, acceptability, useability and cost of materials. Whilst the criterion of content has been emphasised as a critical element in the selection process, the importance of the criteria of acceptability, useability and cost was also recognised. The evidence suggests that as various aspects of subject matter content coverage in materials became more important during the 1970s and 1980s, standards-based reform has reinforced the importance of content as the predominant criterion through the widespread practice of aligning materials to standards.

Lacking the stimulation of a crisis affecting the existing role that materials play, it is unlikely that planned, systematic intervention to change the differentiated selection procedures practised in Australian schools will occur. Furthermore, there was no evidence that curriculum reforms in the Australian states and territories have affected the selection of materials in terms of the criteria of cost, content, acceptability and useability.

10.3.1.3 Use of Materials

The findings, presented in tables 29 to 31, outline a diverse range of activities relating to the use of materials in schools. These activities refer to recommending the use of particular materials, piloting materials, conducting market research into the use of materials, surveying schools, local, state or national systems on the use of materials, and providing facilities and strategies to implement materials in classrooms.

The study showed that committees responsible for writing curriculum and standards' documents usually made recommendations about using materials listed in these documents. Publishing companies were frequently involved in piloting materials in schools, whilst other organisations were occasionally involved in conducting market research into the use of materials. Publishers' associations and other organisations were sometimes involved in surveying schools about their use of materials. Other organisations were occasionally involved in providing facilities to implement materials in classrooms. Activities associated with using materials were identified from the review of research literature reported in Chapter 2 and strategies reported in chapters 5, 6 and 9.

Curriculum or standards' documents developed centrally by education agencies specified recommendations for using materials to develop knowledge, skills and understanding more consistently across subject areas than documents developed by various subject associations, indicating that consensus forged by education agencies across disciplines was an important factor. Documents outlining the National Curriculum for England and Wales and the Northern Ireland Curriculum provided a high degree of specification for using particular materials, but the National Guidelines for Scotland offered less specification. National standards' documents from the United States varied considerably in the extent to which they provided specifications for using particular materials. Such specifications were only provided in the national standards' documents for Science, History, Geography, English Language Arts, Foreign Languages, and Social Studies. National statements from Australia provided a consistently moderate degree of specification for using particular materials in Australian schools. These findings support a view that documents developed by various subject associations lacked consistency across many aspects, including specifications about how materials should be used in particular subject areas.

Whilst publishing companies often piloted materials in schools during the developmental phase, publishing companies, education agencies and other organisations seemed to rarely conduct market research on the adoption of materials. In Scotland, the Scottish Consultative Council on the Curriculum surveyed users in 1992 and 1993 on the use of materials for secondary schools. In the United States, the American Textbook Council monitors state and local adoptions of history textbooks.

The collection of data about the provision and use of materials in schools was usually associated with the broader field of accountability, which focused the interpretation of such data on the issue of adequate provision of materials, but not on the matter of teachers' dependence on materials. OFSTED in England, Her Majesty's Inspectorate for Education and Training in Wales, HM Inspectorate of Education in Scotland, and the Northern Ireland Education and Training Inspectorate provided an extensive accountability system by collecting data on a wide range of educational issues affecting school systems, including the provision of materials. These organisations collected the only comprehensive data on the provision and quality of materials in schools in any of the three countries. This work was supplemented by extensive surveys commissioned by the Publishers Association's Educational Publishers Council focusing on the collection of data about the use of materials in particular subject areas. Unlike the United Kingdom, systematic collection of data about the provision and use of materials was not undertaken in American schools. In recent times, the Association of American Publishers' School Division has been the only organisation to collect such data. Systematic collection of data about the provision and use of materials was not undertaken in Australian schools. However, the Australian Publishers Association has collected data on the use of materials on an unsystematic basis, and the Australian Government Department of Education, Science and Training has collected data for specific national projects, such as the Discovering Democracy program.

Organisations implementing particular strategies to facilitate diffusion and adoption of materials, and strategies for installing, monitoring or modifying materials in schools were rarely encountered, suggesting that such strategies were associated with projects modelled on the curriculum reform movement. The Eisenhower Regional Consortia for Mathematics and Science and the dissemination centres of the National Science Foundation represented the only cases of the former type encountered in the three countries. Connie Muther & Associates offered a consultancy service for school districts by providing a modular training program for selecting and implementing materials aligned to the particular curriculum used in a school district, representing the only case of the latter type encountered in the three countries.

The impact of standards-based and curriculum reforms on the role of materials were difficult to judge in terms of the criteria of content, understandability, useability and likeability. The impact of curriculum reforms in the United Kingdom was probably influential for these criteria in terms of specifications contained in curriculum documents. These specifications focused on identifying materials that present particular content, which met students' needs for understandability and likeability, or designating particular media that maximised useability. However, it is apparent that the failure to collect data on the use of materials in classrooms in the United States and Australia makes it difficult to form a conclusive judgment about the impact of standards-based and curriculum reforms in terms of these criteria.

10.3.2 Limitations

Limitations of the study pertained to each objective. The main limitation of the review of research literature reported in Chapter 2 and the commentary on the impact of educational reform on the materials' marketplace in the United States reported in Chapter 3 was the restriction of their coverage to the United States. Comparable research literature and commentary are unavailable on these topics in the United Kingdom and Australia. The difficulty in defining the population for selecting the sample from those publishing companies involved in publishing materials and the inappropriateness of applying statistical analysis for testing significance due to the high attrition rate constituted the main limitations of the survey of publishers reported in Chapter 4. The restriction to particular sources, such as information and documents collected from officials and web sites of education agencies on activities associated with standards-based and curriculum reforms and aspects associated with materials reported in chapters 5 to 9, may have limited information available from all sources.

10.3.3 Integration

The findings of the study showed that the outcomes of efforts made by policy-makers to reform the materials' marketplace to meet altered educational needs arising from standards-based and curriculum reforms varied markedly between the three countries. Integration of the major and ancillary findings highlights substantial differences. An alliance between educators and publishers in England initiated the first steps in reforming the materials' marketplace to meet the needs of the National Curriculum by providing sufficient materials of high quality. Although an effort was made to reform the materials' marketplace in the United States during the 1980s, this endeavour faltered in the 1990s in spite of publishing companies, subject associations, and federal and state education agencies undertaking a multitude of initiatives to improve the development, selection and use of materials. On the other hand, signs had not emerged from educators and publishers in Australia that they recognised the need to reform the materials' marketplace, although

education agencies initiated several projects to develop materials to meet the needs of curriculum reforms.

National curriculum reforms had a considerable impact on the materials' marketplace in the United Kingdom, although this effect was not uniform across the constituent countries. Implementation of the National Curriculum in England stimulated a consortium of educators and publishers to undertake a series of activities that led the participants to gain a deeper understanding of the complex problems associated with the development, selection and use of materials. These activities set the stage for improving ways the materials' marketplace operates, but the challenge facing educators and publishers will be to transcend the success of this preliminary work by applying the planned change model to reform the materials' marketplace. A capability to extend such a change to other countries in the United Kingdom constitutes an important corollary to this challenge.

Standards-based reform had a considerable impact on the materials' marketplace in the United States, although the complexity of the elements within the system meant that this impact was characterised by a multitude of initiatives rather than a national reform strategy. The deeper understanding policy-makers had gained about the workings of the materials' marketplace in the context of educational reform than was attained by their counterparts in the United Kingdom and Australia arose from the combination of applying research findings to improve practice and conversing on reform through the excellence debate. A cadre of scholars, who devoted much time and effort to researching particular issues associated with materials and the curriculum, prompted policy-makers to fund a textbook improvement project. This project led to the publication of an influential report, which encouraged policy-makers in the 1980s to make a determined effort to reform the materials' marketplace. However, this effort failed in spite of the participants gaining a deeper understanding of the workings of the materials' marketplace. This failure may be attributed to the intransigence of the publishing industry, the inability of the states to form a coalition to determine solutions, and the shift at the federal government away from this issue as a priority. On the other hand, the implementation of standards-based education encouraged each state to initiate specific activities to improve the selection and use of materials in the context of its own standards-based reform. As the advent of standards-based education has not reinstated this issue as a central initiative of educational policy, the imperative for systemic reform of the materials' marketplace seems to have been lost.

National and state-level curriculum reforms had a limited impact on the materials' marketplace in Australia. Publishers and educators failed to form a compact to improve the quality of materials by gaining a better understanding of the materials' marketplace as a

first step to forming a consensus about reforming the existing system. The dual system, whereby materials are selected by different procedures at the compulsory and the post-compulsory levels, has reinforced the major deficiency of decentralised selection procedures applied in Australia by failing to provide educators with sufficient expertise to develop organised, defensible practices to improve decision-making in the selection process. Reform of the materials' marketplace in Australia is unlikely to occur until policy-makers, educators and publishers establish a forum to discuss and cooperate on the issues of developing materials of high quality, involving all stakeholders in the selection process, and providing effective strategies to implement materials in classrooms.

10.3.4 Theoretical Implications

Although a theoretical statement in the form of a set of propositions explaining the relationship between phenomena has not been provided in this field, a representation of these phenomena in the form of a model has been offered by Komoski, as presented in section 3.1. The author concluded that this model does not adequately represent the dynamic process of decision-making occurring between publishing companies, state education agencies, selection committees and learners in determining particular policy choices. In section 3.2, the author proposed applying concepts derived from the CIPP Model to represent the decision-making process occurring within the materials' marketplace as a consequence of standards-based and curriculum reforms. Instead of employing the CIPP Model for the purpose of educational evaluation, it was used to classify different types of change inherent in various activities intended to improve the match between standards and curricula and the materials needed to support them.

This application represents an attempt to integrate the principle that different decision settings involve distinctive forms of decision-making into Komoski's Schema of the Materials' Marketplace. Activities occurring in the homeostatic decision setting for developing, selecting or using materials involve decision-making guided by technical standards and the collection of comprehensive data. Activities occurring in the incremental decision setting for developing, selecting or using materials involve decision-making guided by expert judgment and structured inquiry. Activities occurring in the neomobilistic decision setting for developing, selecting or using materials involve decision-making guided by innovative activity for inventing, testing and diffusing new solutions. It is evident that these different forms of decision-making will affect the interaction of variables within the materials' marketplace.

10.3.5 Further Research

The study investigated the topic of developing, selecting and using materials in the context of supporting standards-based and curriculum reforms in three settings by applying historical, survey and content analysis methods. It also attempted to integrate the findings of the study into an existing model of the materials' marketplace. The findings of the study suggest that further research applying a range of methods could enhance knowledge and understanding about these issues.

First, the search that led to the review of research literature showed that little research has been conducted on this topic relating to the United Kingdom and Australia. It is possible that the conduct of systematic searches for research reports on particular aspects of this topic could produce useful results. The production of bibliographies of research literature would provide publishers and educators in the United Kingdom and Australia with useful resources to assist them to improve the development, selection and use of materials. Second, the study traced the impact of educational reform on changing the materials' marketplace in the United States. Further research into this topic, not only with reference to the United States, but more importantly relating to the United Kingdom and Australia, may increase researchers' and policy-makers' knowledge and understanding about what variables interact and produce change in the materials' marketplace. Third, the attempt to integrate the principle that different decision settings involve distinctive forms of decision-making into Komoski's Schema of the Materials' Marketplace is incomplete. These concepts need to be represented in Komoski's Schema of the Materials' Marketplace. The refined model could provide the basis for researchers and policy-makers to gain a better understanding of the variables interacting in the materials' marketplace. Fourth, the results of the survey of publishers suggest that generalised patterns for conducting work occurred in the publishing industry across the three countries, but this conclusion could not be confirmed through statistical analysis of the data. Studies employing a range of research methods could be applied to investigate whether these patterns are generic. Fifth, the role of education agencies in developing, selecting and using materials in the context of standards-based and curriculum reforms, covered by the remaining five objectives, embodied a range of phenomena examined in each of the three countries. In each case, a range of research methods should be applied to investigate the interaction of variables affecting these phenomena in particular settings.

APPENDIX A

SAMPLE OF BRITISH PUBLISHERS OF MATERIALS

1. Addison Wesley Longman, Edinburgh Gate, Harlow, Essex CM20 2JE, England
2. Allied Mouse, 'Mayfield', High Street, Dingwell, Ross Shire IV15 9SS, Scotland
3. A & C Black, 35 Bedford Row, London WC1R 4JH, England
4. Brilliant Publications, The Old School Yard, Leighton Road, Northall, Dunstable, Bedfordshire LU6 2HA, England
5. Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, England
6. Church House Publishing, Church House, Great Smith Street, Westminster, London SW1P 3NZ, England
7. Collins Educational, HarperCollins Publishers, 77-85 Fulham Palace Road, Hammersmith, London W6 8JB, England
8. Colourpoint Books, Unit D5, Ards Business Centre, Jubilee Road, Newtownards, County Down BT23 4YH, Northern Ireland
9. Drake Educational Associates, St Fagans Road, Fairwater, Cardiff CF5 3AE, Wales
10. Evans Brothers, 2a Portman Mansions, Chiltern Street, London W1M 1LE, England
11. First & Best in Education, Earlstrees Court, Earlstrees Road, Corby, Northants NN17 4AX
12. Folens Publishers, Albert House, Apex Business Centre, Boscombe Road, Dunstable, Bedfordshire, LU5 4RL, England
13. Ginn & Co., Prebendal House, Parson's Fee, Aylesbury, Bucks HP20 2QY, England
14. Hawthorns Publications, Ponds View House, 6a High Street, Otford, Sevenoaks, Kent TN14 5PQ, England
15. Heinemann Educational Publishing, Halley Court, Jordan Hill, Oxford OX2 8EJ, England
16. Hilda King Educational, Ashwells Manor Drive, Penn, Bucks HP10 8EU, England
17. HLT Publications, 200 Greyhound Road, London W14 9RY, England
18. Hodder Headline, 338 Euston Road, London NW1 3BH, England
19. John Murray, 50 Albemarle Street, London W1X 4BD, England
20. Ladybird Books, Beeches Road, Loughborough, Leicester LE11 2NQ, England
21. Learning Together, 18 Shandon Park, Belfast BT5 6NW, Northern Ireland
22. Letterland International, 33 New Road, Barton, Cambridge CB3 7AY, England
23. Lion Publishing, Peter's Way, Sandy Lane West, Littlemore, Oxford OX4 5HG, England
24. Lutterworth Press, PO Box 60, Cambridge CB1 2NT, England
25. Macmillan Press, Brunel Road, Houndsmills, Basingstoke, Hampshire RG21 6XS, England
26. Naturetrek Educational, 5 Llys Llannerch, St Asaph, Denbighshire LL17 0AZ, Wales
27. New Internationalist Publications, 55 Rectory Road, Oxford OX4 1BW, England
28. New Media Press, PO Box 4441, Henley-on-Thames, Oxon RG9 3YR, England
29. Oxford University Press, Great Clarendon Street, Oxford OX2 6DP, England
30. Pearson Publishing, Chesterton Mill, French's Road, Cambridge CB4 3NP, England
31. Prim-Ed Publishing, Kelsey Close, Attleborough Fields Industrial Estate, Nuneaton, Warwickshire CV11 6RS, England
32. Ransom Publishing, Ransom House, 2 High Street, Watlington, Oxon OX9 5PS, England
33. Sherston Software, Angel House, Sherston, Malmesbury, Wiltshire SN16 0LH, England
34. Scholastic, Villiers House, Clarendon Avenue, Leamington Spa, Warwickshire CV32 5PR, England
35. SchoolPlay Productions, 15 Inglis Road, Colchester, Essex CO3 3HU, England
36. Stokesby House Publications, Stokesby, Norfolk NR29 3ET, England
37. Supportive Learning Publications, 23 West View, Chirk, Clwyd LL14 5HL, Wales
38. Thomas Nelson and Sons, Nelson House, Mayfield Road, Walton-on-Thames KT12 5PL, England
39. Two-Can Publishing, 346 Old Street, London EC1V 9NQ, England
40. Watts Publishing Group, 96 Leonard Street, London ED2A 4RH, England
41. Wimbledon Publishing Co., 33 Compton Road, London SW19 7QA, England

APPENDIX B

SURVEY OF PUBLISHERS OF CURRICULUM MATERIALS IN THE UNITED KINGDOM

Questionnaire

Introduction

The purpose of this questionnaire is to identify the impact of the National Curriculum for England and Wales, the national guidelines for Scotland, and the Northern Ireland Curriculum on the content and instructional design of curriculum materials. This survey involves a sample of publishers consisting of all members of the Publishers Association involved in publishing curriculum materials for use in primary and secondary schools.

The questionnaire is divided into four parts:

- Part A: Background Information (items 1-27);
- Part B: Impact of the National Curriculum (items 28-57);
- Part C: Instructional Design of Curriculum Materials (items 58-62); and
- Part D: Additional Information (items 63-66).

Responding to the Questionnaire

It is suggested that a company employee with expertise in sales should complete Part A. Another employee, who is familiar with the process used by your company to develop curriculum materials and the application of the National Curriculum, should complete Parts B and C. The director of educational publishing should complete Part D.

Most items can be answered by ticking a box. Please use the space under general comments at the end of the questionnaire, if additional space is required to respond to open-ended items. Please attach all documents to the completed questionnaire.

Your name is not required, but you are requested to identify your company to assist data collection procedures. All information obtained from this survey will be treated confidentially, and presented in the project report in tabulated form only, without identifying your company. In participating in the survey, you understand that research data gathered for the study may be published, but that you may withdraw at any time from the survey. If you have any queries concerning the questionnaire, please call me by International Direct Dial on 011 61 3 6225 1335 or contact me by writing. I will be available most mornings and evenings local time. Alternatively, you can contact Mr John Davies of the Publishers Association's Educational Publishers Council, should you require further background information about the survey.

I would appreciate if you can complete and mail the questionnaire within two weeks of receiving it. Completing the questionnaire should take you about 30 minutes. I hope you will be able to make this time available, as your opinions are valued.

Returning the Questionnaire

Please airmail completed or uncompleted questionnaires to Michael G. Watt, 316 Churchill Avenue, Sandy Bay, Tasmania 7005, Australia. You are requested to attach a note identifying your company, if returning an uncompleted questionnaire in the enclosed pre-addressed envelope. This will avoid follow-up communications being made to your company.

Part A: Background Information

Please tick the appropriate box.

1. Approximately, how many full-time employees work in your publishing company?

- | | |
|------------------|--------------------------|
| A. less than 10 | ☐ |
| B. 10 to 24 | ☐ |
| C. 25 to 49 | ☐ |
| D. 50 to 100 | ☐ |
| E. more than 100 | ☐ |

2. Approximately, what is the value of your company's annual turnover in curriculum materials sold for use by students in primary and secondary schools in the United Kingdom?

- | | |
|-----------------------------------|--------------------------|
| A. less than 50,000 pounds | ☐ |
| B. 50,000 to 499,999 pounds | ☐ |
| C. 500,000 to 4,999,999 pounds | ☐ |
| D. 5,000,000 to 25,000,000 pounds | ☐ |
| F. more than 25,000,000 pounds | ☐ |

Part A includes a sub-set of questions consisting of items numbered 3-7. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish curriculum materials for use in schools in ...	no, never	yes, intend to	yes, at present	yes, in the past
3. ... England?	☐	☐	☐	☐
4. ... Wales?	☐	☐	☐	☐
5. ... Scotland?	☐	☐	☐	☐
6. ... Northern Ireland?	☐	☐	☐	☐
7. ... foreign countries? (please specify)	☐	☐	☐	☐

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Part A includes a sub-set of questions consisting of items numbered 8-16. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish...	yes, intend to	yes, at present	yes, in the past	no, never
8. ... textbooks for use in schools?	☐	☐	☐	☐
9. ... supplemental reading materials for use in schools?	☐	☐	☐	☐
10. ... print-based kit materials for use in schools?	☐	☐	☐	☐
11. ... slides, filmstrips, films, and television programs for use in schools?	☐	☐	☐	☐
12. ... audiocassettes, gramophone records, and compact disks for use in schools?	☐	☐	☐	☐
13. ... videos for use in schools?	☐	☐	☐	☐
14. ... multi-media materials (that combine print, audio-visual, video, and/or computer-based media) for use in schools?	☐	☐	☐	☐
15. ... computer software programs for use in schools?	☐	☐	☐	☐
16 ... other materials for use in schools? (please specify)	☐	☐	☐	☐

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Part A includes a sub-set of questions consisting of items numbered 17-27. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish curriculum materials for the foundation subject of ...	yes, intend to	yes, at present	yes, in the past	no, never
17. ... English?	☐	☐	☐	☐
18. ... Mathematics?	☐	☐	☐	☐
19. ... Science?	☐	☐	☐	☐
20. ... Design and Technology?	☐	☐	☐	☐
21. ... Information Technology?	☐	☐	☐	☐
22. ... Modern Foreign Languages?	☐	☐	☐	☐
23. ... Geography?	☐	☐	☐	☐
24. ... History?	☐	☐	☐	☐
25. ... Art?	☐	☐	☐	☐
26. ... Music?	☐	☐	☐	☐
27. ... Physical Education?	☐	☐	☐	☐

Part B: Impact of the National Curriculum

Part B examines the impact of the National Curriculum for England and Wales, the National Guidelines for Scotland, and the Northern Ireland Curriculum on the content and instructional design of curriculum materials.

Part B includes a sub-set of questions consisting of items numbered 28-38. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in the National Curriculum order for England and Wales in ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, no at all	un- cer- tain
28. ... English?	☐	☐	☐	☐	☐
29. ... Mathematics?	☐	☐	☐	☐	☐
30. ... Science?	☐	☐	☐	☐	☐

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in the National Curriculum order for England and Wales in ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, no at all	un-certain
31. ... Design and Technology?	☐	☐	☐	☐	☐
32. ... Information Technology?	☐	☐	☐	☐	☐
33. ... Modern Foreign Languages?	☐	☐	☐	☐	☐
34. ... Geography?	☐	☐	☐	☐	☐
35. ... History?	☐	☐	☐	☐	☐
36. ... Art?	☐	☐	☐	☐	☐
37. ... Music?	☐	☐	☐	☐	☐
38. ... Physical Education?	☐	☐	☐	☐	☐

Part B includes a sub-set of questions consisting of items numbered 39-44. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in the National Guideline for Scotland in ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, no at all	un-certain
39. ... Language?	☐	☐	☐	☐	☐
40. ... Mathematics?	☐	☐	☐	☐	☐
41. ... Environmental Studies?	☐	☐	☐	☐	☐
42. ... Expressive Arts?	☐	☐	☐	☐	☐
43. ... Religious and Moral Education?	☐	☐	☐	☐	☐
44. ... Curriculum Design for the Secondary Stages?	☐	☐	☐	☐	☐

Part B includes a sub-set of questions consisting of items numbered 45-50. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in the Northern Ireland Curriculum orders for subjects within the area of study in ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, no at all	un-certain
45. ... English?	☐	☐	☐	☐	☐
46. ... Mathematics?	☐	☐	☐	☐	☐
47. ... Science and Technology?	☐	☐	☐	☐	☐
48. ... Environment and Society?	☐	☐	☐	☐	☐
49. ... Creative and Expressive Studies?	☐	☐	☐	☐	☐
50. ... Language Studies?	☐	☐	☐	☐	☐

51. What factors can you specify to explain the nature of the influence identified in the previous three sub-sets (items 28-50)? Please list them.

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Part B includes a sub-set of questions consisting of items numbered 52-61. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

How important are the National Curriculum orders and/or guidelines for ...	yes, very important	yes, important	no, not very important	no, not at all important	un- cer- tain
--	------------------------	-------------------	------------------------------	--------------------------------	---------------------

52. ... identifying the essential strands of knowledge, skills and processes of particular subject areas?

☐	☐	☐	☐	☐
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53. ... identifying the media of materials that teachers should use to support the curriculum in particular subject areas?

☐	☐	☐	☐	☐
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54. ... incorporating essential knowledge, skills and processes within new materials that teachers should use to support the curriculum?

☐	☐	☐	☐	☐
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55. ... aligning the elements of the curriculum, such as, the objectives, content, teaching and learning approaches, and the means for assessing students, within new materials that teachers should use to support the curriculum?

☐	☐	☐	☐	☐
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The researcher wishes to obtain copies of your company's policy statement on the use of the National Curriculum orders, if one is available, and one of your company's products, which is claimed to have been influenced by the National Curriculum orders.

56. What is the title of this policy statement? Please name it, and enclose a copy when returning this questionnaire.

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57. What is the title of this product? Please name it, and enclose a copy when returning this questionnaire.

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Part C: Instructional Design of Curriculum Materials

Part C examines the effect that your company's application of the National Curriculum has had on the instructional design of new curriculum materials.

Part C includes a sub-set of questions consisting of items numbered 58-61. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that your company's application of the National Curriculum for England and Wales, National Guidelines for Scotland and/or Northern Ireland Curriculum to develop curriculum materials has affected ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, no at all	un-certain
58. ... their content in terms of philosophy and coverage?	☐	☐	☐	☐	☐
59. ... their acceptability in terms of inclusiveness?	☐	☐	☐	☐	☐
60. ... their useability by teachers and students?	☐	☐	☐	☐	☐
61. ... their initial and continuing cost?	☐	☐	☐	☐	☐

62. In what ways do you believe that the greater uniformity in the curriculum, afforded by the National Curriculum orders or National Guidelines, has improved or hindered your company's development of new curriculum materials? Please list them.

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Part D: Additional Information

Please tick the appropriate box or write in the space provided. Responses to these items are optional.

63. What is the current role within the publishing company of the respondent to Part A?

- | | |
|------------------------------|--------------------------|
| A. department manager | ☐ |
| B. editor | ☐ |
| C. sales person | ☐ |
| D. other
(please specify) | ☐ |

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64. What is the current role within the publishing company of the respondent to Parts B and C?

- | | |
|------------------------------|--------------------------|
| A. department manager | ☐ |
| B. editor | ☐ |
| C. sales person | ☐ |
| D. other
(please specify) | ☐ |

.....

65. What is the name and address of your company?

Name:

Address:

..... Country: Post Code:

66. Do you have any general comments to make? Please present these below.

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Please check that you have completed all items. Thank you for spending the time to answer the questionnaire.

Please airmail the completed questionnaire to Michael G. Watt, 316 Churchill Avenue, Sandy Bay, Tasmania 7005, Australia.

APPENDIX C

SAMPLE OF AMERICAN PUBLISHERS OF MATERIALS

- Pearson Education
Addison Wesley Longman
- 1. Scott Foresman-Addison Wesley, 1900 East Lake Drive, Glenview, IL 60025
- 2. Cuisenaire-Dale Seymour, PO Box 5026, White Plains, NY 10602-5026
Simon & Schuster
- 3. Silver Burdett Ginn, 250 James Street, Morristown, NJ 07962
- 4. Modern Curriculum, PO Box 2649, Columbus, OH 43216
 - Harcourt Brace & Co.
- 5. Harcourt Brace School Publishers, 6277 Sea Harbor Drive, Orlando, FL 32887
- 6. Holt, Rinehart and Winston, 1120 South Capitol of Texas Highway, Austin, TX 78746
 - Houghton Mifflin Co.
- 7. Houghton Mifflin School Division, 222 Berkeley Street, Boston, MA 02116
- 8. McDougal Littell, PO Box 1667, Evanston, IL 60204
 - International Thomson Publishing
- 9. South-Western Educational Publishing, 5101 Madison Road, Cincinnati, OH 45227
 - McGraw-Hill Companies
- 10. McGraw-Hill School Division, 1221 Avenue of the Americas, New York, NY 10020-1095
- 11. Glencoe/McGraw-Hill, 936 Eastwind Drive, Westerville, OH 43081
- 12. McGraw-Hill Learning Materials, 250 Old Wilson Bridge Road, Suite 310, Worthington, OH 43085
- 13. SRA McGraw-Hill, 250 Old Wilson Bridge Road, Suite 310, Worthington, OH 43085
 - Other
- 14. William K. Bradford Publishing Co., PO Box 1355, Concord, MA 01742
- 15. Davis Publications, 50 Portland Street, Worcester, MA 01608
- 16. Hampton Brown Co., 26385 Carmel Rancho Boulevard, Carmel, CA 93923
- 17. Steck-Vaughn Co., PO Box 26015, Austin TX 78755
- 18. Brown-ROA, 1665 Embassy West Drive, Dubuque, IA 52002
- 19. Great Source Education Group, 181 Ballardvale Street, Wilmington, MA 01887
- 20. Publishers Resource Group, 307 Camp Craft Road, Suite 100, Austin, TX 78746
- 21. Santillana Publishing Co., 2105 NW 86th Avenue, Miami, FL 33122
- 22. Scholastic, 555 Broadway, New York, NY 10012
- 23. Sundance Publishing, PO Box 1326, 234 Taylor Street, Littleton, MA 01460
- 24. Troll Communications LLC, 100 Corporate Drive, Mahwah, NJ 07430

APPENDIX D

SURVEY OF PUBLISHERS OF INSTRUCTIONAL MATERIALS IN THE UNITED STATES

Questionnaire

Introduction

The purpose of this questionnaire is to identify the impact of national and states' standards on the content and instructional design of instructional materials. This survey involves a sample of publishers consisting of all members of the Association of American Publishers involved in publishing instructional materials for use in elementary and secondary schools.

The questionnaire is divided into four parts:

- Part A: Background Information (items 1-30);
- Part B: Impact of the National Standards (items 31-55);
- Part C: Instructional Design of Instructional Materials (items 56-60); and
- Part D: Additional Information (items 61-64).

Responding to the Questionnaire

It is suggested that a company employee with expertise in sales should complete Part A. Another employee, who is familiar with the process used by your company to develop instructional materials and the application of the national standards, should complete Parts B and C. The company's director of educational publishing should complete Part D.

Most items can be answered by checking a box. Please use the space under general comments at the end of the questionnaire, if additional space is required to respond to open-ended items. Please attach all documents to the completed questionnaire.

Your name is not required, but you are requested to identify your company to assist data collection procedures. All information obtained from this survey will be treated confidentially, and presented in the project report in tabulated form only, without identifying your company. In participating in the survey, you understand that research data gathered for the study may be published, but that you may withdraw at any time from the survey. If you require further background information about the survey, or have any queries concerning the questionnaire, please call me by International Direct Dial on 011 61 3 6225 1335 or contact me by writing. I will be available most mornings and evenings local time.

I would appreciate if you can complete and mail the questionnaire within two weeks of receiving it. Completing the questionnaire should take you about 30 minutes. I hope you will be able to make this time available, as your opinions are valued.

Returning the Questionnaire

Please airmail completed or uncompleted questionnaires to Michael G. Watt, 316 Churchill Avenue, Sandy Bay, Tasmania 7005, Australia. You are requested to attach a note identifying your company, if returning an uncompleted questionnaire in the enclosed pre-addressed envelope. This will avoid follow-up communications being made to your company.

Part A: Background Information

Please tick the appropriate box.

1. Approximately, how many full-time employees work in your publishing company?

- | | |
|------------------|--------------------------|
| A. less than 10 | ☐ |
| B. 10 to 24 | ☐ |
| C. 25 to 49 | ☐ |
| D. 50 to 100 | ☐ |
| E. more than 100 | ☐ |

2. Approximately, what is the value of your company's annual turnover in instructional materials sold for use by students in elementary and secondary schools in the United States?

- | | |
|--------------------------------|--------------------------|
| A. less than \$65,000 | ☐ |
| B. \$65,000 to \$649,999 | ☐ |
| C. \$650,000 to \$6,649,999 | ☐ |
| D. \$6,650,000 to \$33,999,999 | ☐ |
| E. more than \$34,000,000 | ☐ |

States in the United States are often classified as 'adoption' or 'open' states, according to the policy followed for selecting instructional materials. In each 'adoption' state, local school districts purchase instructional materials from a list of materials approved by the state board of education. In 'open' states, each local school district is free to select its own instructional materials.

Part A includes a sub-set of questions consisting of items numbered 3-9. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can check more than one box for each item in this sub-set.

Does your company publish instructional materials for use in schools in ...

yes, intend to	yes, at present	yes, in the past	no, never
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3. ... the northeastern "open" states (CT, DC, DE, MA, MD, ME, NH, NJ, NY, OH, PA, RI, VT)?

☐	☐	☐	☐
--------------------------	--------------------------	--------------------------	--------------------------

4. ... the southeastern "adoption" states (AL, FL, GA, IN, KY, NC, SC, TN, VA, WV)?

☐	☐	☐	☐
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Does your company publish instructional materials for use in schools in ...	yes, intend to	yes, at present	yes, in the past	no, never
5. ... the midwestern "open" states (IA, IL, KS, MI, MN, MO, NB, ND, SD, WI)?	☐	☐	☐	☐
6. ... the southwestern "adoption" states (AR, LA, MS, NM, OK, TX)?	☐	☐	☐	☐
7. ... the western "adoption" states (CA, ID, NV, OR, UT)?	☐	☐	☐	☐
8. ... the western "open" states (AK, AZ, CO, HI, MT, WA, WY)?	☐	☐	☐	☐
9. ... foreign countries? (please specify)	☐	☐	☐	☐

.....

.....

Part A includes a sub-set of questions consisting of items numbered 10-18. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish...	yes, intend to	yes, at present	yes, in the past	no, never
10. ... textbooks for use in schools?	☐	☐	☐	☐
11. ... supplemental reading materials for use in schools?	☐	☐	☐	☐
12. ... print-based kit materials for use in schools?	☐	☐	☐	☐
13. ... slides, filmstrips, films, and television programs for use in schools?	☐	☐	☐	☐
14. ... audiocassettes, gramophone records, and compact disks for use in schools?	☐	☐	☐	☐
15. ... videos for use in schools?	☐	☐	☐	☐
16. ... multi-media materials (that combine print, audio-visual, video, and/or computer-based media) for use in schools?	☐	☐	☐	☐

Does your company publish...	yes, intend to	yes, at present	yes, in the past	no, never
17. ... computer software programs for use in schools?	☐	☐	☐	☐
18 ... other materials for use in schools? (please specify)	☐	☐	☐	☐

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Part A includes a sub-set of questions consisting of items numbered 19-30. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish instructional materials for the subject of ...	yes, intend to	yes, at present	yes, in the past	no, never
19. ... the Arts?	☐	☐	☐	☐
20. ... Civics and Government?	☐	☐	☐	☐
21. ... Economics?	☐	☐	☐	☐
22. ... English Language Arts?	☐	☐	☐	☐
23. ... Foreign Languages?	☐	☐	☐	☐
24. ... Geography?	☐	☐	☐	☐
25. ... Health?	☐	☐	☐	☐
26. ... History?	☐	☐	☐	☐
27. ... Mathematics?	☐	☐	☐	☐
28. ... Physical Education?	☐	☐	☐	☐
29. ... Science?	☐	☐	☐	☐
30. ... Social Studies?	☐	☐	☐	☐

Part B: Impact of the National Standards

Part B examines the impact that the national standards are having on publishers of instructional materials in the United States. Between 1986 and 1997, national subject associations, some of which were contracted by the United States Department of Education, developed national standards' documents presenting the content that all students should know and be able to do through a process of consensus within the wider educational community. Because the states have constitutional responsibility for education, the national standards do not provide a national curriculum, but form a basis for the states to develop their own standards and curriculum frameworks.

Part B includes a sub-set of questions consisting of items numbered 31-42. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that the content of instructional materials your company is developing is influenced by information contained in the ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, no at all	un-certain
31. ... <i>National Standards for Arts Education?</i>	☐	☐	☐	☐	☐
32. ... <i>National Standards for Civics and Government?</i>	☐	☐	☐	☐	☐
33. ... <i>National Content Standards in Economics?</i>	☐	☐	☐	☐	☐
34. ... <i>Standards for English Languages Arts?</i>	☐	☐	☐	☐	☐
35. ... <i>Standards for Foreign Language Learning?</i>	☐	☐	☐	☐	☐
36. ... <i>National Geography Standards?</i>	☐	☐	☐	☐	☐
37. ... <i>National Health Education Standards?</i>	☐	☐	☐	☐	☐
38. ... <i>National Standards for History?</i>	☐	☐	☐	☐	☐
39. ... <i>Curriculum and Evaluation Standards for Mathematics?</i>	☐	☐	☐	☐	☐
40. ... <i>National Standards for Physical Education?</i>	☐	☐	☐	☐	☐
41. ... <i>National Science Education Standards?</i>	☐	☐	☐	☐	☐
42. ... <i>Curriculum Standards for the Social Studies?</i>	☐	☐	☐	☐	☐

Part B includes a sub-set of questions consisting of items numbered 43-48. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that the content of instructional materials your company is developing is influenced by information contained in the state standards and curriculum frameworks developed by ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at al	un- cer- tain
43. ... the northeastern "open" states (CT, DC, DE, MA, MD, ME, NH, NJ, NY, OH, PA, RI, VT)?	☐	☐	☐	☐	☐
44. ... the southeastern "adoption" states (AL, FL, GA, IN, KY, NC, SC, TN, VA, WV)?	☐	☐	☐	☐	☐
45. ...the midwestern "open" states (IA, IL, KS, MI, MN, MO, NB, ND, SD, WI)?	☐	☐	☐	☐	☐
46. ... the southwestern "adoption" states (AR, LA, MS, NM, OK, TX)?	☐	☐	☐	☐	☐
47. ... the western "adoption" states (CA, ID, NV, OR, UT)?	☐	☐	☐	☐	☐
48. ... the western "open" states (AK, AZ, CO, HI, MT, WA, WY)?	☐	☐	☐	☐	☐

49. What factors can you specify to explain the nature of the influence identified in the previous two sub-sets (items 30-48)? Please list them.

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Part B includes a sub-set of questions consisting of items numbered 50-53. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

How important are the national and state standards' documents for ...	yes, very important	yes, important	no, not very important	no, not at all important	un- cer- tain
50. ... identifying the essential strands of knowledge, skills and processes of particular subject areas?	☐	☐	☐	☐	☐
51. ... identifying the media of materials that teachers should use to support the curriculum in particular subject areas?	☐	☐	☐	☐	☐
52. ... incorporating essential knowledge, skills and processes within new materials that teachers should use to support the curriculum?	☐	☐	☐	☐	☐
53. ... aligning the elements of the curriculum, such as, the objectives, content, teaching and learning approaches, and the means for assessing students, within new materials that teachers should use to support the curriculum?	☐	☐	☐	☐	☐

The researcher wishes to obtain copies of your company's policy statement on the use of the national and states' standards, if one is available, and one of your company's products, which is claimed to have been influenced by the national or states' standards.

54. What is the title of this policy statement? Please name it, and enclose a copy when returning this questionnaire.

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55. What is the title of this product? Please name it, and enclose a copy when returning this questionnaire.

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Part C: Instructional Design of Instructional Materials

Part C examines the effect that your company's application of the national and states' standards has had on the instructional design of new instructional materials.

Part C includes a sub-set of questions consisting of items numbered 56-59. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that your company's application of the national standards and/or states' standards and curriculum frameworks to develop new instructional materials has affected ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	uncertain
56. ... their content in terms of philosophy and coverage?	☐	☐	☐	☐	☐
57. ... their acceptability in terms of inclusiveness?	☐	☐	☐	☐	☐
58. ... their useability by teachers and students?	☐	☐	☐	☐	☐
59. ... their initial and continuing cost?	☐	☐	☐	☐	☐

60. In what ways do you believe that the greater uniformity in the curriculum, afforded by the national standards, has improved or hindered your company's development of new instructional materials? Please list them.

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Part D: Additional Information

Please check the appropriate box or write in the space provided. Responses to these items are optional.

61. What is the current role within the publishing company of the respondent to Part A?

- | | |
|-----------------------|--------------------------|
| A. department manager | ☐ |
| B. editor | ☐ |
| C. sales person | ☐ |
| D. other | ☐ |
| (please specify) | |

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62. What is the current role within the publishing company of the respondent to Parts B and C?

- | | |
|-----------------------|--------------------------|
| A. department manager | ☐ |
| B. editor | ☐ |
| C. sales person | ☐ |
| D. other | ☐ |
| (please specify) | |

.....

63. What is the name and address of your company?

Name:

Address:

..... State: Zip Code:

64. Do you have any general comments to make? Please present these below.

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Please check that you have completed all items. Thank you for spending the time to answer the questionnaire.

Please airmail the completed questionnaire to Michael G. Watt, 316 Churchill Avenue, Sandy Bay, Tasmania 7005, Australia.

APPENDIX E

SAMPLE OF AUSTRALIAN PUBLISHERS OF MATERIALS

1. Addison Wesley Longman Australia, PO Box 1024, South Melbourne, VIC 3205
2. Cambridge University Press, 10 Stamford Road, Oakleigh, VIC 3166
3. Chalkface Press, 8 Graham Court, Cottesloe, WA 6011
4. Greater Glider Productions, Book Farm, 330 Reesville Road, Maleny, QLD 4552
5. Hodder Headline, 10-16 South Street, Rydalmere, NSW 2116
6. Horwitz Martin, Horwitz House, 55 Chandos Street, St Leonards, NSW 2065
7. Intext Book Company, 825 Glenferrie Road, Hawthorn, VIC 3122
8. Jacaranda Wiley, PO Box 1226, Milton, QLD 4064
9. Learning Solutions, PO Box 1447, Osborne Park, WA 6916
10. Lioncrest, Locked Bag 20, Rozelle, NSW 2039
11. McGraw-Hill Book Company, PO Box 239, Roseville, NSW 2069
12. Macmillan Education Australia, Locked Bag 1400, South Yarra, VIC 3141
13. Mimosa Publications, PO Box 779, Hawthorn, VIC 3122
14. Of Primary Importance, PO Box 894, Mildura, VIC 3502
15. Nelson ITP, 102 Dodds Street, South Melbourne, VIC 3205
16. On The Stone, PO Box 84, Ainslie, ACT 2602
17. Oxford University Press, GPO Box 2784Y, Melbourne VIC 3001
18. Pascal Press, PO Box 250, Glebe, NSW 2037
19. Pearson Education Australia, Unit 14, Level 2, 14 Aquatic Drive, French's Forest, NSW 2086
20. Reed Educational and Professional Publishing Australia, Reed Elsevier, PO Box 460, Port Melbourne, VIC 3207
21. R.I.C. Publications, PO Box 332, Greenwood, WA 6024
22. Scholastic Australia, PO Box 579, Gosford, NSW 2250
23. Wizard Books, PO Box 304, Ballarat, VIC 3350

APPENDIX F

SURVEY OF PUBLISHERS OF CURRICULUM MATERIALS USED IN AUSTRALIA

Questionnaire

Introduction

The purpose of this questionnaire is to identify the impact of the national statements and profiles on the development of curriculum materials, and their effect on the educational design of curriculum materials. This survey involves a sample of publishers consisting of all members of the Australian Publishers Association involved in publishing curriculum materials for use in primary and secondary schools.

The questionnaire is divided into four parts:

- Part A: Background Information (items 1-29);
- Part B: Impact of National Curriculum Collaboration (items 30-57);
- Part C: Educational Design of Curriculum Materials (items 58-62); and
- Part D: Additional Information (items 63-66).

Responding to the Questionnaire

It is suggested that a company employee with expertise in sales should complete Part A. Another employee, who is familiar with the process used by your company to develop curriculum materials and the application of the national statements and profiles, should complete Parts B and C. The company's director should complete Part D.

Most items can be answered by ticking a box. Please use the space under general comments at the end of the questionnaire, if additional space is required to respond to open-ended items. Please attach all documents to the completed questionnaire.

Your name is not required, but you are requested to identify your company to assist data collection procedures. All information obtained from this survey will be treated confidentially, and presented in the project report in tabulated form only, without identifying your company. In participating in the survey, you understand that research data gathered for the study may be published, but that you may withdraw at any time from the survey. If you require further background information about the survey, or have any queries concerning the questionnaire, please call me on 03 6225 1335. I will be available most mornings and evenings local time.

I would appreciate if you can complete and mail the questionnaire within two weeks of receiving it. Completing the questionnaire should take you about 30 minutes. I hope you will be able to make this time available, as your opinions are valued.

Returning the Questionnaire

Please mail completed or uncompleted questionnaires to Michael G. Watt, 316 Churchill Avenue, Sandy Bay, Tasmania 7005, Australia. You are requested to attach a note identifying your company, if returning an uncompleted questionnaire in the enclosed pre-addressed envelope. This will avoid follow-up communications being made to your company.

Part A: Background Information

Please tick the appropriate box.

1. Approximately, how many full-time employees work in your publishing company?

- A. less than 10 ☐
- B. 10 to 24 ☐
- C. 25 to 49 ☐
- D. 50 to 100 ☐
- E. more than 100 ☐

2. Approximately, what is the value of your company's annual turnover in curriculum materials sold for use by students in primary and secondary schools?

- A. less than \$100,000 ☐
- B. \$100,000 to \$999,999 ☐
- C. \$1,000,000 to \$9,999,999 ☐
- D. \$10,000,000 to \$50,000,000 ☐
- E. more than \$50,000,000 ☐

Part A includes a sub-set of questions consisting of items numbered 3-11. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish curriculum materials for use in schools in ...	no, never	yes, intend to	yes, at present	yes, in the past
3. ... the Australian Capital Territory?	☐	☐	☐	☐
4. ... New South Wales?	☐	☐	☐	☐
5. ... the Northern Territory?	☐	☐	☐	☐
6. ... Queensland?	☐	☐	☐	☐
7. ... South Australia?	☐	☐	☐	☐
8. ... Tasmania?	☐	☐	☐	☐
9. ... Victoria?	☐	☐	☐	☐
10. ... Western Australia?	☐	☐	☐	☐

Does your company publish curriculum materials for use in schools in ...	no, never	yes, intend to	yes, at present	yes, in the past
11. ... foreign countries? (please specify)	☐	☐	☐	☐

.....

Part A includes a sub-set of questions consisting of items numbered 12-20. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish...	yes, intend to	yes, at present	yes, in the past	no, never
12. ... textbooks for use in schools?	☐	☐	☐	☐
13. ... supplemental reading materials for use in schools?	☐	☐	☐	☐
14. ... print-based kit materials for use in schools?	☐	☐	☐	☐
15. ... slides, filmstrips, films, and television programs for use in schools?	☐	☐	☐	☐
16. ... audiocassettes, gramophone records, and compact disks for use in schools?	☐	☐	☐	☐
17. ... videos for use in schools?	☐	☐	☐	☐
18. ... multi-media materials (that combine print, audio-visual, video, and/or computer-based media) for use in schools?	☐	☐	☐	☐
19. ... computer software programs for use in schools?	☐	☐	☐	☐
20. ... other materials for use in schools? (please specify)	☐	☐	☐	☐

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Part A includes a sub-set of questions consisting of items numbered 21-29. To the right of each item are four boxes, which are labelled at the top. Please read each item and then tick the box that best fits your opinion for that item. You can tick more than one box for each item in this sub-set.

Does your company publish curriculum materials for the learning area of ...	yes, intend to	yes, at present	yes, in the past	no, never
21. ... Mathematics?	☐	☐	☐	☐
22. ... Science?	☐	☐	☐	☐
23. ... English?	☐	☐	☐	☐
24. ... Studies of Society and Environment?	☐	☐	☐	☐
25. ... Health and Physical Education?	☐	☐	☐	☐
26. ... the Arts?	☐	☐	☐	☐
27. ... Technology?	☐	☐	☐	☐
28. ... Languages other than English?	☐	☐	☐	☐
29. ... other? (please specify)	☐	☐	☐	☐

.....

Part B: Impact of National Curriculum Collaboration

Part B examines the impact that national curriculum collaboration is having on publishers of curriculum materials in Australia. Between 1986 and 1993, the Commonwealth, state and territory education agencies collaborated on reaching a national agreement on the school curriculum. Common and Agreed National Goals for Schooling in Australia were specified, and national statements and profiles were developed in eight learning areas. Because the states and territories have constitutional responsibility for education, the national statements and profiles do not provide a national curriculum, but a basis for the states and territories to develop their own curriculum frameworks and syllabuses.

Part B includes a sub-set of questions consisting of items numbered 30-37. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	un- cer- tain
30. ... <i>A National Statement on Mathematics for Australian Schools?</i>	☐	☐	☐	☐	☐

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	un-certain
31. ... <i>A Statement on Science for Australian Schools?</i>	☐	☐	☐	☐	☐
32. ... <i>A Statement on English for Australian Schools?</i>	☐	☐	☐	☐	☐
33. ... <i>A Statement on Studies of Society and Environment for Australian Schools?</i>	☐	☐	☐	☐	☐
34. ... <i>A Statement on Health and Physical Education for Australian Schools?</i>	☐	☐	☐	☐	☐
35. ... <i>A Statement on Arts for Australian Schools?</i>	☐	☐	☐	☐	☐
36. ... <i>A Statement on Technology for Australian Schools?</i>	☐	☐	☐	☐	☐
37. ... <i>A Statement on Languages other than English for Australian Schools?</i>	☐	☐	☐	☐	☐

Part B includes a sub-set of questions consisting of items numbered 38-50. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in the ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	un-certain
38. ... Australian Capital Territory's ACT Curriculum Frameworks (Years P to 10)?	☐	☐	☐	☐	☐
39. ... Australian Capital Territory Board of Senior Secondary Studies' ACT Course Frameworks (Years 11 and 12)?	☐	☐	☐	☐	☐
40. ... New South Wales Board of Studies' syllabuses for stages 1 to 5 (Years K to 10) ?	☐	☐	☐	☐	☐

To what extent do you believe that the content of curriculum materials your company is developing is influenced by information contained in the ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	uncertain
41. ... New South Wales Board of Studies' syllabuses for stage 6 (Years 11 and 12) ?	☐	☐	☐	☐	☐
42. ... Northern Territory Board of Studies' courses (Years 8 to 12)?	☐	☐	☐	☐	☐
43. ... Queensland School Curriculum Council's syllabuses (Years P to 10)?	☐	☐	☐	☐	☐
44. ... Queensland Board of Senior Secondary School Studies' syllabuses (Years 11 and 12)?	☐	☐	☐	☐	☐
45. ... Senior Secondary Assessment Board of South Australia's syllabuses (Years 11 and 12)?	☐	☐	☐	☐	☐
46. ... Tasmanian Secondary Assessment Board's syllabuses (Years 9 to 12)?	☐	☐	☐	☐	☐
47. ... Victorian Board of Studies' Curriculum and Standards Framework (Years K to 10)?	☐	☐	☐	☐	☐
48. ... Victorian Board of Studies' courses (Years 11 and 12)?	☐	☐	☐	☐	☐
49. ... Curriculum Council of Western Australia's Curriculum Framework (Years K to 10)?	☐	☐	☐	☐	☐
50. ... Curriculum Council of Western Australia's syllabuses (Years 11 and 12)?	☐	☐	☐	☐	☐

51. What factors can you specify to explain the nature of the influence identified in the previous two sub-sets (items 30-50)? Please list them.

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Part B includes a sub-set of questions consisting of items numbered 52-55. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

	yes, very important	yes, important	no, not very important	no, not at all important	un- cer- tain
How important are the national statements and/or state and territory frameworks and syllabuses for ...					
52. ... identifying the essential strands of knowledge, skills and processes of particular learning areas?	☐	☐	☐	☐	☐
53. ... identifying the media of materials that teachers should use to support the curriculum in particular learning areas?	☐	☐	☐	☐	☐
54. ... incorporating essential knowledge, skills and processes within new materials that teachers should use to support the curriculum?	☐	☐	☐	☐	☐
55. ... aligning the elements of the curriculum, such as, the objectives, content, teaching and learning approaches, and the means for assessing students, that teachers should use to support the curriculum?	☐	☐	☐	☐	☐

The researcher wishes to obtain copies of your company's policy statement on the use of the national statements and profiles, if one is available, and one of your company's products, which is claimed to have been influenced by the national statements.

56. What is the title of this policy statement? Please name it, and enclose a copy when returning this questionnaire.

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57. What is the title of this product? Please name it, and enclose a copy when returning this questionnaire.

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Part C: Educational Design of Curriculum Materials

Part C examines the effect that your company's application of the national statements and profiles has had on the educational design of new curriculum materials.

Part C includes a sub-set of questions consisting of items numbered 58-61. To the right of each item are five boxes, which are labelled at the top. Please read each item, and then tick the box that best fits your opinion for that item.

To what extent do you believe that your company's application of the national statements and/or state and territory frameworks and syllabuses to develop new curriculum materials has affected ...	yes, to a great extent	yes, to some extent	yes, to a little extent	no, not at all	uncertain
58. ... their content in terms of philosophy and coverage?	☐	☐	☐	☐	☐
59. ... their acceptability in terms of inclusiveness?	☐	☐	☐	☐	☐
60. ... their useability by teachers and students?	☐	☐	☐	☐	☐
61. ... their initial and continuing cost?	☐	☐	☐	☐	☐

62. In what ways do you believe that the greater uniformity in the curriculum, afforded by the national statements and profiles, has improved or hindered your company's development of new curriculum materials? Please list them.

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Part D: Additional Information

Please tick the appropriate box or write in the space provided. Responses to these items are optional.

63. What is the current role within the publishing company of the respondent to Part A?

- | | |
|------------------------------|--------------------------|
| A. department manager | ☐ |
| B. editor | ☐ |
| C. sales person | ☐ |
| D. other
(please specify) | ☐ |

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64. What is the current role within the publishing company of the respondent to Parts B and C?

- | | |
|------------------------------|--------------------------|
| A. department manager | ☐ |
| B. editor | ☐ |
| C. sales person | ☐ |
| D. other
(please specify) | ☐ |

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65. What is the name and address of your company?

Name:

Address:

..... State: Post Code:

66. Do you have any general comments to make? Please present these below.

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Please check that you have completed all items. Thank you for spending the time to answer the questionnaire.

Please mail the completed questionnaire to Michael G. Watt, 316 Churchill Avenue, Sandy Bay, Tasmania 7005, Australia.

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